The Cotton Gin and Oil Mill

PRESS

APRIL 7, 1956

57th year

THE MAGAZINE OF THE COTTON GINNING AND OILSEED PROCESSING INDUSTRIES

A PROGRESSIVE AND RESPONSIBLE PUBLICATION

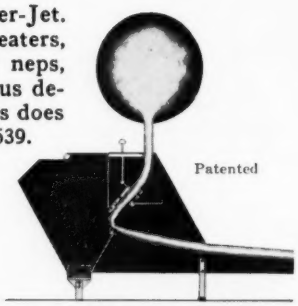
Special BETTER PRODUCTION PRACTICES *Issue*

You can see it here!

This unretouched photograph is of trash discharge scooped from a Super-Jet lint cleaner in actual operation on moderately trashy machine picked cotton. You can see plenty of trash . . . leaves, stems, motes . . . and a lot of nep-stock. But there's no spinable fiber. Super-Jet gives you a better net turnout of good spinning-quality fiber because it takes out trash; leaves lint in.

AND NO MOVING PARTS IS THE REASON

Here is a cross section of a Super-Jet. It has no moving parts — no beaters, no saws — nothing to create neps, nothing to wear out. A Lummus development of gentle air-streams does the work. Write for Bulletin 639.



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LUMMUS COTTON GIN CO.

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CONTINENTAL'S

Outfit Feed Control System Features AMPLE SURGE CAPACITY

Ample surge capacity, insuring **fully effective control,** is one of many features that make Continental's Outfit Feed Control System outstanding. Flow of seed cotton is automatically regulated from the telescope, through all the overhead equipment and to the Extractor-Feeders. This automatic control unit replaces the overflow pen, overflow telescope and piping to overflow as well as the necessity of the operator changing a gate valve to pick up the overflow.

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Write for our Bulletin 224, which gives complete description.

CONTINENTAL GIN COMPANY

BIRMINGHAM, ALABAMA

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improved in 1956!

Get a first-hand report . . . talk with the ginners who watched almost 600 Super Champs prove themselves in action in 1955.

Make a first-hand investigation . . . check the improvements made on the new model.

Then start planning immediately to get 1956 Super Champs on your gins before the new season starts.

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Sales representatives throughout cotton producing districts.

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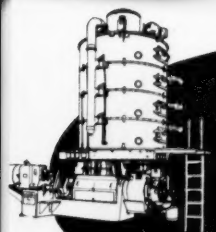
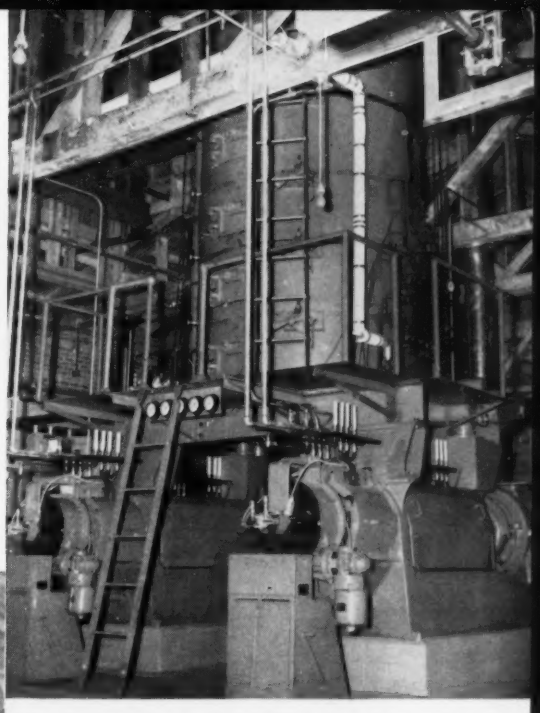
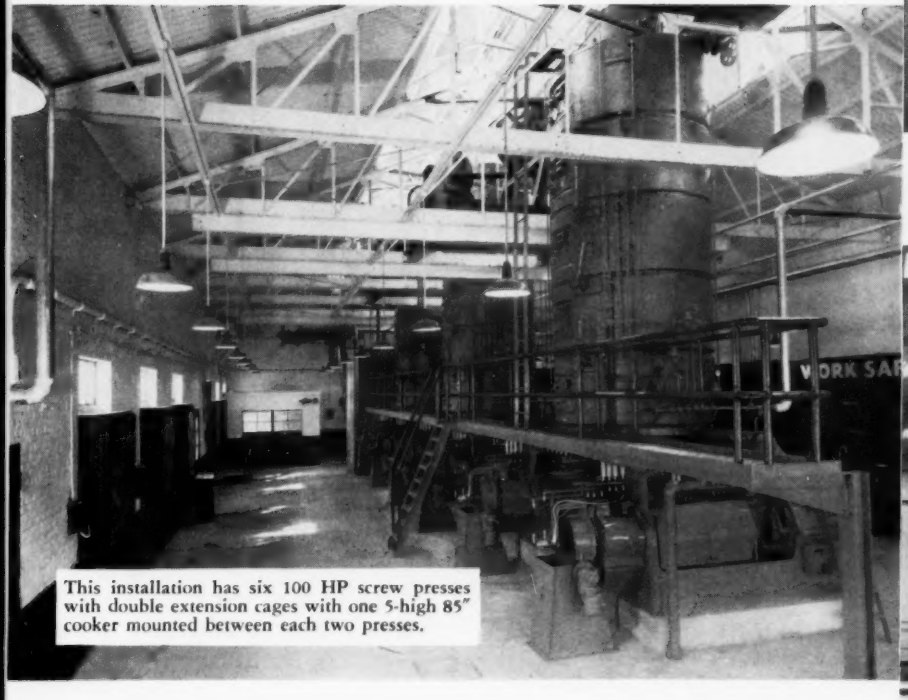


MORE PROOF OF UNQUESTIONABLE LEADERSHIP OF FRENCH SCREW PRESSES

and the reason why so many mills are installing FRENCH SCREW PRESSES



Shown above are two 100 HP screw presses with double extension cages with a 5-high 85" cooker mounted between the two presses.



This installation has six 100 HP screw presses with double extension cages with one 5-high 85" cooker mounted between each two presses.

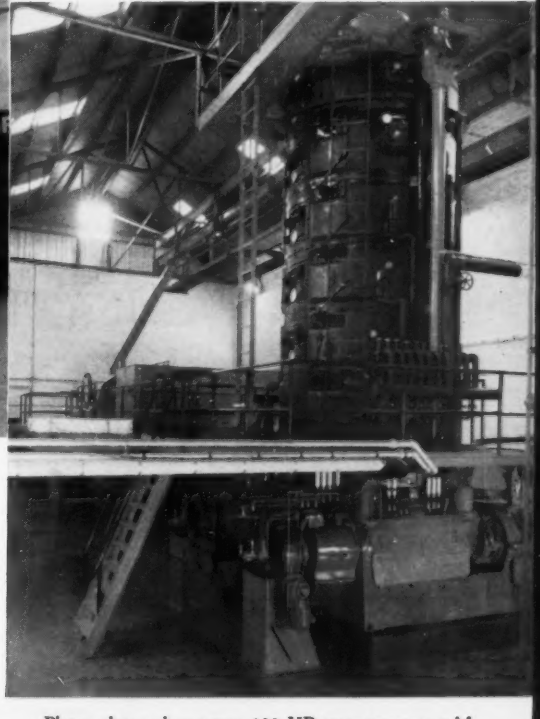


Photo above shows two 100 HP screw presses with double extension cages with a 6-high 85" cooker mounted between the two presses.

The results obtained by French Screw Presses from coast to coast speak for themselves and offer proof of the efficiency and ease of operation which you can expect. In large mills and small mills, French Screw Presses are consistently producing highest quality premium products . . . with low operating costs and a minimum of maintenance. For example, a Mississippi mill with the latest type French Screw Press reports these average figures for the month of December:

Daily throughput	80 tons cottonseed a day
Moisture in cake	3.78%
Oil in cake	2.77%
Ammonia in cake	8.22%
Standard	33.50%

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- MECHANICAL SCREW PRESSES
- COOKER-DRYERS
- SOLVENT EXTRACTION PLANTS
- FLAKING AND CRUSHING ROLLS

☆ ON OUR COVER:

As the land is prepared for crops once again, men from the Carolinas to California are busy getting ready to produce the most versatile crop of all —cotton. The food and fiber which it supplies have served men so long and so well that all associated with it should, in this spring of '56, have renewed pride in their part in its service—a renewed determination to work to solve its problems. From the front to back covers of this issue there are suggestions of the opportunities and challenges which cotton offers to all who work with it.

Photograph by Bob Taylor

VOL. 57 APRIL 7, 1956 NO. 7

The Cotton Gin and Oil Mill PRESS...

READ BY COTTON GINNERS, COTTONSEED CRUSHERS AND OTHER OILSEED PROCESSORS FROM CALIFORNIA TO THE CAROLINAS

★ ★ ★

OFFICIAL MAGAZINE OF:

National Cottonseed Products Association

National Cotton Ginners' Association

Alabama Cotton Ginners' Association

Arizona Ginners' Association

Arkansas-Missouri Ginners' Association

California Cotton Ginners' Association

The Carolinas Ginners' Association

Georgia Cotton Ginners' Association

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Tennessee Cotton Ginners' Association

Texas Cotton Ginners' Association

★

THE COTTON GIN AND OIL MILL PRESS *is the Official Magazine of the foregoing associations for official communications and news releases, but the associations are in no way responsible for the editorial expressions or policies contained herein.*

THE COTTON GIN AND OIL MILL PRESS

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- MATURES EARLY
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4 QUALITY STRAINS

- WATSON'S PEDIGREED
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GARLAND (Dallas County) TEXAS

Here's a tip on a SURE THING...

You'll CUT COSTS . . . SAVE MONEY ON EVERY BALE WITH JOHN DEERE Cotton Harvesting EQUIPMENT

Here's the John Deere No. 1 One-Row Mounted Picker—a profit-maker on average acreages.

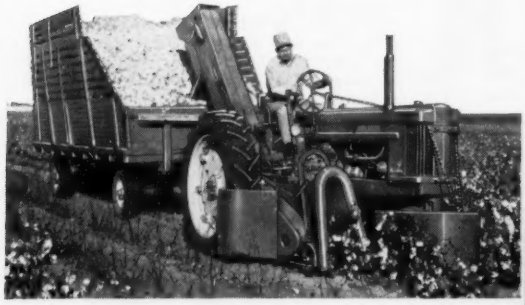
The John Deere No. 8 Two-Row Self-Propelled proves a sound investment for large operators . . . custom men.

DON'T let hand labor eat up your profits—be rid of the thousand-and-one headaches of hand harvests—cut costs and save time with a John Deere Cotton Picker or Stripper.

In open-type cotton, one man and the efficient, spindle-type John Deere No. 1 One-Row Mounted Picker pick up to an acre every hour—replace up to 40 or more hand pickers. The big-capacity, two-row, self-propelled No. 8 Picker picks up to 1-3/4 acres per hour—does the work of 70 or more hand pickers.

In stormproof cotton, the John Deere No. 16 Two-Row Mounted Stripper saves owners $30 to $50 per bale or more.

See your John Deere dealer. Write today for free literature.



The efficient John Deere No. 16 Two-Row Mounted Stripper strips plants clean in stormproof cotton.

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SEE YOUR JOHN DEERE DEALER

JOHN DEERE QUALITY FARM EQUIPMENT

JOHN DEERE

MOLINE, ILLINOIS

SHRED COTTON STALKS
KILL PINK BOLLWORMS

with the BUDGET-PRICED
LILLISTON
ROTO-SPEED JV ROTARY CUTTER

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JVT

JVC — lift model for the standard 3-point hitch

JVH — for the new two-point "fast-hitch" tractors

JVT — tow model with adjustable position wheels

The JV's powerful impact blades (patent applied for) do the job thoroughly — fast — leaving only fine, easily plowed cuttings that help condition soil. Mows pastures and clears brush-choked land, too. The JV is an all purpose cutter that works all over the farm all year round.

A recent front page Feature of the Week in The Cotton Trade Journal stated that rotary cutters properly used will destroy 75% of pink bollworms. The JV's the answer!

ONE OF THE BEST INVESTMENTS A COTTON FARMER CAN MAKE. FOR FULL INFORMATION ON THE JV AND OTHER ROTO-SPEEDS, WRITE

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Southwest Branch: 3311 LaSalle Street, Waco, Texas

laugh it off

The golfer had lost his ball and was inclined to be annoyed with his caddie.

"Why didn't you watch where it went?" he asked angrily.

"Well, sir," said the boy, "it don't usually go nowhere, so it took me unprepared like."

• • •

If you think you're going to be happy and prosperous by sitting back and letting the government take care of you —take a look at the American Indians!

• • •

Sailor (explaining why a ship is called "she"): "It costs a lot to keep her in paint and powder, she'll drift off if you don't keep her tied down, she makes her best showing in a high wind, and it takes a man to handle her."

• • •

A woman is getting older when she begins to worry more how her shoes fit than her sweater.

• • •

"My husband would never chase after another woman. He's too fine, too decent, too old."

• • •

In a gay and carefree mood a man telephoned a friend at 2 o'clock in the morning. "I hope I haven't disturbed you," he said cheerfully.

"Oh, no," the friend replied. "That's quite all right. I had to get up to answer the phone, anyway."

• • •

Captain (on ferry, shouting down to crew's quarters): "Is there a mackintosh down there big enough to keep two young ladies warm?"

Voice from below: "No, but there's a McPherson who's willing to try!"

• • •

• • •

A very military major at an overseas post was discussing the program with a troupe of show girls sent out to entertain the men.

"And," said the major, "at 1700 hours, if you like, you girls can mess with the enlisted men."

"Sure," answered a blonde, "but we'll have to get something to eat first."

• • •

A radio listening-preference survey required that the answers had to come from male heads of households. The survey got off to a fast start, but then was called off abruptly. Answering the question, "To whom are you listening now?" the first 78 men replied, "My wife."

• • •

The young man was eyeing a perfumery counter display when the clerk, trying to be helpful, suggested, "Here's one called 'Possibilities' for $25 an ounce."

"At that price," said the young man, "you should have one called, 'Certainty'."

• • •

Bus driver: "Madam, are all these children yours, or is it a picnic?"

Lady: "They're all mine — and it ain't no picnic!"

• • •

Recipe: The way to make a peach cordial is to buy her a drink.

• • •

Patrolman, after a collision: "You saw this lady driving toward you. Why didn't you give her half the road?"

Motorist: "I couldn't tell which half she wanted."

Whether it's PICKED by hand ... or by MACHINE

cotton is worth wrapping Right

use HINDOO

AND YOUR COTTON WILL HAVE THE RIGHT PROTECTION

a dependable product made for ginners who demand the best

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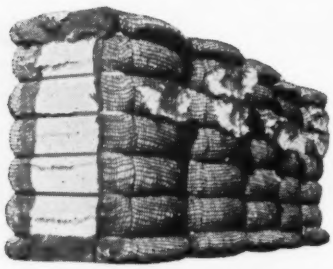
TRADE MARK

Cotton ties and buckles

...the ginner's favorite

NEW DESIGN

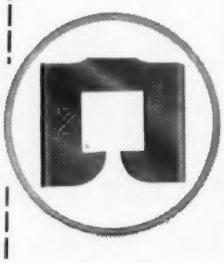


DIXISTEEL COTTON TIES

Standard bundles weigh approximately 45 pounds and contain 30 ties—each 15/16 inches by approximately 19 gauge, 11½ feet long. Thirty buckles attached to each bundle. Sixty-pound ties are also made. Both weights available without buckles. Buckles shipped in kegs or carload bulk lots.

From Carolina to California, DIXISTEEL Cotton Ties are a favorite with ginners, because they're tough and strong, yet easy to work, and have no sharp edges to cut gloves or hands. Made from our own special-analysis steel, they are rolled to uniform thickness, width and finish.

New, re-designed DIXISTEEL Arrow Buckles are now being furnished with DIXISTEEL Cotton Ties. They have a greater seating surface and are reinforced with a heavy bead on each end. These buckles will not snap at the eye, are easy to thread, and won't slip, slide or cut the tie.



IMPROVED DXL BUCKLE ALSO AVAILABLE

Also available, when requested, is the sturdy DIXISTEEL Buckle, introduced for the first time in 1955. It, too, has been improved and many ginners now prefer this buckle.

DIXISTEEL TRADE MARK COTTON TIES AND BUCKLES

made only by the

Atlantic Steel Company

ATLANTA, GEORGIA

Opportunities Ahead . . .

AS COTTON WORKS to trim off the surplus fat added during the easy years of a postwar era, to rebuild muscles needed in the competitive fight and to regain full vigor in the market place, one thing is crystal clear. Efficiency and economy of production are essential nutrients in the diet upon which the champion of fibers must train for the fight.

Better practices which bring greater economy and efficiency in production are the subject of this special issue of The Cotton Gin and Oil Mill Press. Assembled here is a wealth of information which crushers, ginners and others in the industry need and can effectively use to help their own communities meet the cotton problems of 1956.

The men who have assembled this information are recognized authorities in their fields. Each is devoted to his work and a leader in it. They are contributing much to cotton, and the material which they have so ably summarized in these pages is a part of that contribution.

Problems of production, pricing and governmental policies—important as they are—are not the field of these authorities, nor of this issue of The Press. The concern here is with what happens in the Brazos Bottoms rather than on Pennsylvania Avenue.

However, we tread on no toes sensitive to the differences of opinion as to policies and prices when we point out that it may mean even more to the producer to be able to save $26 per acre in the hoe bill (as was done in a Mississippi Experiment Station test reported in this issue) than to get two cents more per pound in the support price.

• **Opportunities Are Great**—Dominating our authors' thinking is a feeling of optimism as to the opportunities for cotton to make great gains by fitting together the many known better production practices.

"Farmers are going to do something about the cotton situation in 1956," says Rex Colwick in his article. "They don't have to be organized nor do they need to become involved in political controversy to do it. The individual farmer will not find a new use for cotton, will not conduct a promotional campaign, nor solve the surplus problem; but he will simply do his best to produce more for less. By so doing, he will assure himself a profit and help put cotton in a better competitive position."

Speaking of the phenomenal increases in productive ability of past years, Paulling asks, "Who can say the limit has been reached? Who would have said 30 years ago that we could ever cut the cotton acreage 62 percent, reducing the total yield only nine percent?"

Saunders echoes the same confidence when he comments, "With the continued teamwork of research, education and industry, solutions (can be) found to insure cotton's future position in the competitive markets of the world."

When Leyendecker lists three million bales of cotton lost to diseases during the past two seasons, he is suggesting an opportunity to gain productive ability per acre with very little added productive cost.

So does Johnston, when he warns of the dangers of heavy boll weevil attack in 1956 and stresses the value to be obtained through early control of the pest.

• **It's Industry's Opportunity, Too**—Production efficiency on the farm is the central theme of this issue, but this cannot and should not be separated from harvesting and processing. Our authors emphasize this throughout their discussions.

Breeders, as Welch points out, can help cotton meet today's needs in the market place in two ways. One is by developing a plant that is more efficient in producing lint and seed. Another is by developing varieties that possess new fiber properties that will help cotton to meet the needs of mills and the preferences of consumers.

Ginning improvement, Ragsdale brings out, has kept pace with progress in mechanization of harvesting; and Pendleton pays a well deserved tribute to the ginning industry when he says, "Because ginners have given more assistance to research and educational programs than ever before, 1955 was a year of improvement. And, because the ginning industry had the courage to act—rather than to wait— 1956 finds it

better prepared than ever before to render quality service to the cotton farmers of America."

Not the least of the tributes to cooperation throughout the cotton industry is that found in the article by Louis Hawkins of Oklahoma who has been one of the leaders in bringing about that cooperation. It is with interest that we recall the birth of the idea for this article as we chatted with the author at the Cotton Mechanization Conference last fall, and it is a pleasure to print a tribute which we believe will make any member proud of the industry which Hawkins praises.

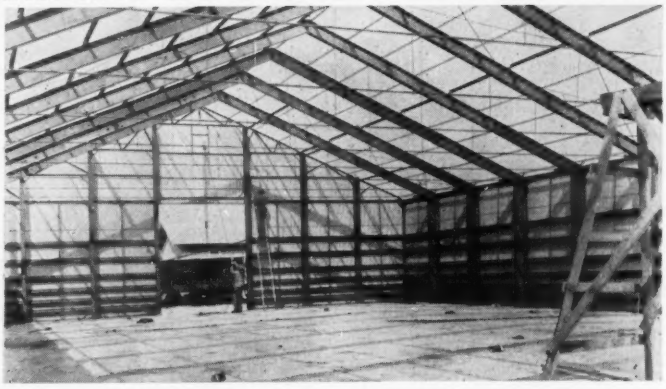
"The cotton industry," says Hawkins, "offers one of the most clear-cut examples of effective and successful teamwork to be found in the world today."

And, after discussing some outstanding examples of cooperation, he concludes:

"Where else but in America could you hope to find such a highly perfected and thoroughly successful realization of the complex but voluntarily coordinated and systematic effort toward an undertaking as difficult, involved and far reaching in effects as is modern, improved cotton production? It is a miracle, no less, and no other commodity group has approached the cotton group in such a marvelous achievement."

Such words from the men who know cotton so well should offer encouragement to each ginner and crusher—and to the farmers with whom he works—as he faces the admittedly serious problems of the season ahead. To provide such encouragement, along with practical information that can be used in solving many of these serious problems, is the objective of the staff of The Press in publishing the special articles which discuss Better Production Practices in this issue.

BRADEN
GRAIN STORAGE BUILDINGS



CONSTRUCTION VIEW OF GRAIN STORAGE BUILDING

We will be happy to assist with your plans for low-cost wind-resistant, fire and lightning safe, rodent proof buildings.

IMPLEMENT STORAGE — SEED HOUSES
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• Oil Mill Suppliers' Group Is Active

MANY FIRMS are sending their 1956 dues to the Oil Mill Machinery Manufacturers' and Supply Association in order to participate in plans for entertaining oil mill superintendents at the annual meeting of the International Oil Mill Superintendents' Association in June, according to Ward C. Johnson, Dallas, secretary-treasurer of the suppliers' group.

The non-profit organization of oil mill machinery manufacturers and allied firms will provide many entertainment features when the superintendents meet June 3-6 at the Plaza Hotel in San Antonio. Kenneth Whitlock, Corpus Christi, is president of the suppliers' group and H. B. Adams, Dallas, is vice-president.

Johnson reports that the following firms are among those that have paid dues for 1956, and urges others to send in their membership fees promptly:

Industrial Sheet Metal Co., Phoenix, Ariz.
French Oil Mill Machinery Co., Piqua, Ohio.
Industrial Machinery Co., Inc., Fort Worth.
The Cotton Gin and Oil Mill Press, Dallas.
Continental Gin Co., Birmingham.
Muskogee Iron Works, Muskogee, Okla.
Keytsone Lubricating Co., Philadelphia.
H. C. Barrington Welding Works, Torrance, Calif.
Sutorbilt Corporation, Los Angeles.
Texas Electric Service Co., Fort Worth.
Moss-Gordin Lint Cleaner Co., Lubboch.
T. B. Wood's Sons Co., Dallas.
Falk Corporation, Dallas.
Mosher Steel Co., Dallas.
Link Belt Co., Houston.
Screw Conveyor Corp., Winona, Miss.

Apply Early for Cotton Classing, USDA Urges

Farmers are urged to apply for cotton classification and cotton market news services in 1956 by USDA, which has announced the procedure to be followed. Group of producers organized to promote the improvement of cotton, which adopt a variety of cotton, file application, arranage for sampling, and meet certain other requirements as to membership are eligible for these services.

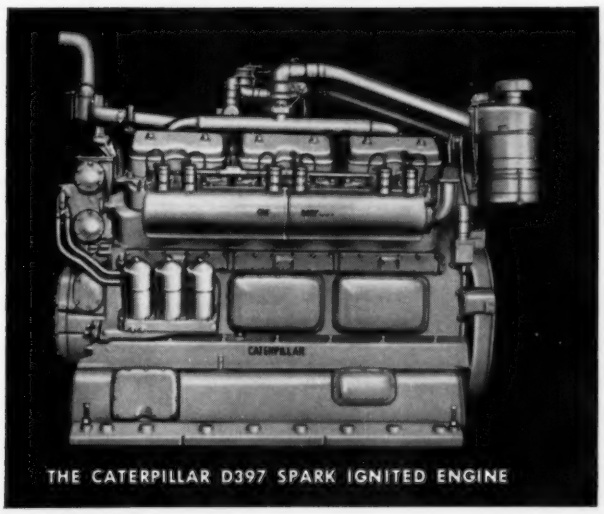
Information and applications may be obtained from County Agents, from state and county Agricultural Stabilization and Conservation offices, or from Agricultural Marketing Service, Cotton Division offices at the following addresses: 1020 Crescent Ave., N.E. (mail address Box 7068, Station C), Atlanta; 1328 Monroe Street (mail address P.O. Box 8014, Crosstown Station), Memphis 4; Room 506 U.S. Terminal Annex Bldg., Dallas 22; Room 247 U.S. Post Office Bldg., Phoenix.

Announcing 2 CAT* Spark Ignited Engines

D397
400 HP
@ 1200 RPM

D375
267 HP
@ 1200 RPM

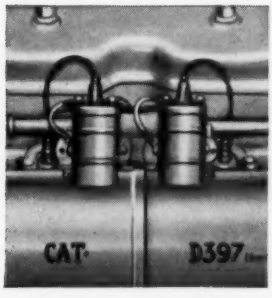
10:1 COMPRESSION RATIO for economical operation
SPARK COIL AT EACH CYLINDER for hotter spark, greater efficiency
LOW-TENSION MAGNETO for long, trouble-free life
MODERN HEAVY-DUTY DESIGN
PLUS OTHER ADVANCE-DESIGN FEATURES!



THE CATERPILLAR D397 SPARK IGNITED ENGINE

Developed to set new standards of efficiency and economy using low-cost natural gas, the D397 and D375 Spark Ignited Engines are the most recent additions to Caterpillar's line-up of modern, heavy-duty units. Wherever you put them to work, you can count on maximum performance with minimum maintenance. Conversion units are also available for diesels. Your Caterpillar Dealer, who backs you with prompt service anywhere and any time, will be glad to give you complete facts about this new power pair. See him today!

Caterpillar Tractor Co., Peoria, Illinois, U. S. A.



A separate spark coil for each cylinder, featured in both the D397 and D375, provides a hotter spark for greater efficiency and permits the use of a low-tension magneto for long, trouble-free life. Advance-design features like this are the result of Caterpillar research and practical field experience—an example of Caterpillar leadership in action!

CATERPILLAR*

*Caterpillar and Cat are Registered Trademarks of Caterpillar Tractor Co.

MODERN HEAVY-DUTY SPARK IGNITED ENGINES

THE LONG, tedious process of developing new cotton varieties is greatly speeded up when breeders get a winter crop grown at Iguala, Mexico. The Winter Breeding Service unit at Iguala was established several years ago as a cooperative project between the National Cotton Council, USDA and breeders.

Breeder's Role in Cotton Needs

Starting at the very source of the cotton industry, seed breeders are helping to meet cotton's needs on the market today in a two-fold manner by developing a more efficient plant and new fiber properties.

HOW CAN THE BREEDER help cotton meet today's needs in the market place? There are two all-important ways:

1.—By developing a cotton plant that is more efficient in producing lint and seed—so that growers can cut costs and move into a better position to meet price competition from rayon and other fibers.

2.—By continuing to improve or develop commercial varieties that possess new combinations of fiber properties—so that cotton will have stronger quality advantages in holding its old markets and fighting to win new ones.

All breeders are working hard on the task of making the plant more efficient. They have good leads and are making tangible progress.

But in terms of building entirely new combinations of fiber properties into cotton, all breeders are pretty well stymied. No one can give them a clear picture of where they need to move from here in inherent quality improvement. A little later, we'll take a look at a project aimed at correcting this situation. But, for the moment, let's look at the work now going on to make the plant a better "factory" for turning out cotton lint and seed.

• **Making Plant A Better "Factory"** — Throughout the history of cotton breeding, a great amount of emphasis has been placed on the growing characteristics that contribute to "earliness." And here we are thinking about such characteristics as fast seed germination . . . resistance to cold temperatures in early season . . . reaching a peak level of fruiting very quickly and holding the level high as long as possible . . . reducing the length of time for bolls to mature . . . and the like.

Improved earliness can bring many benefits. It can help prevent or reduce replanting, and avoid skippy stands. It can help avoid late-season insect problems. It can help growers get their crop out ahead of bad weather which damages quality. It can help avoid the fiber "immaturity" that results when frost catches many bolls in an incomplete stage of development.

Breeders have always sought earliness, and they're still shooting for it today.

Just recently, breeders have discovered a reason why some varieites of seed are slow to germinate. There is a close relationship between quickness of germination and hardness of the seed coat. The harder the coat, the slower the germination. For example, the Acalas and Pima S-1 are relatively hard-coated and the seed of these varieites has been relatively slow to come up.

But breeders and agronomists, working together, have turned up what appears to be a promising solution to this problem. They have found that a warm-water bath for hard-coated seed will greatly speed up germination—and that the beneficial effect of the water treatment lasts while seed is in storage prior to planting.

Not only does this promise immediate assistance to planters of hard-coated seed, but also to breeders who are now experimenting with "wild" cottons, which often are 100 percent hard-seeded.

Early germination is important, and work along this line is bringing tangible progress. But once the seedling is above ground, it still faces the danger of early-season cold temperatures—and the accompanying problem of such seedling diseases as soreshin and damping-off.

By CLAUDE L. WELCH
Director,
Production and Marketing,
National Cotton Council

CLAUDE L. WELCH

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Breeders know that cold-resistance is an inherited plant characteristic, and there are strong indications that they will be able to build a large amount of this resistance into commercial varieties of cotton.

At the same time, teamwork between agronomists and breeders is producing good progress in using chemicals to help protect young plants against seedling diseases. Seed protcetants and in-the-furrow applications of fungicides look good as means of helping plants through the critical early period of their lives.

Shortening the time required for bolls to mature is a major project of breeders in some areas. This is particularly important in localities where growing seasons are short and where frosts may come very early. An early frost frequently means that late-season cotton may be a mixture of good, mature cotton, along with a large quantity of immature, extra-fine, wasty cotton. This poses an immense problem for many cotton manufactures, who constantly stress the need for greater fiber uniformity. Breeders, by speeding up boll development, hope to minimize this problem.

With wilt diseases becoming an ever-larger threat to yields over a large part of the Belt, breeders are concentrating more and more on building wilt-resistance into their commercial varieties. Very good results already have been obtained in developing resistance to fusarium wilt in areas most seriously affected. And in the West, there has been good progress in making plants tolerant to verticillium wilt.

Breeders also have been working to keep in step with the growing trend toward mechanization of cotton production. Making the plant more desirable for mechanical harvesting has been of particular concern. Efforts are being made to develop plants that stand straighter, that are less bushy, that start fruiting higher from the ground, and that are more prone to shed leaves in late season, either by natural or chemical means.

PART of the precise work of cotton breeding is "selfing"—that is, closing up the cotton bloom so that the plant is self pollinated.

The fine hairs on leaves of current varieties are a distinct problem in mechanical harvesting. They hook onto fibers and add leaf trash to seed cotton. Breeders hope to solve this problem by imparting "smooth leaf character" to commercial varieties of cotton, and there are indications that this may be done in the near future.

All of these efforts to make the cotton plant itself more efficient are important. They promise better yields, better preservation of cotton's quality, and lower costs per pound and per bale—all of which can be translated into higher net income for the grower, into better ability to meet price competition in the market place, or both.

• **Breeding for New Qualities** — But what of that other big opportunity—the opportunity to breed new qualities into our fiber so that it will produce fabrics and end-products that will have greater appeal to consumers?

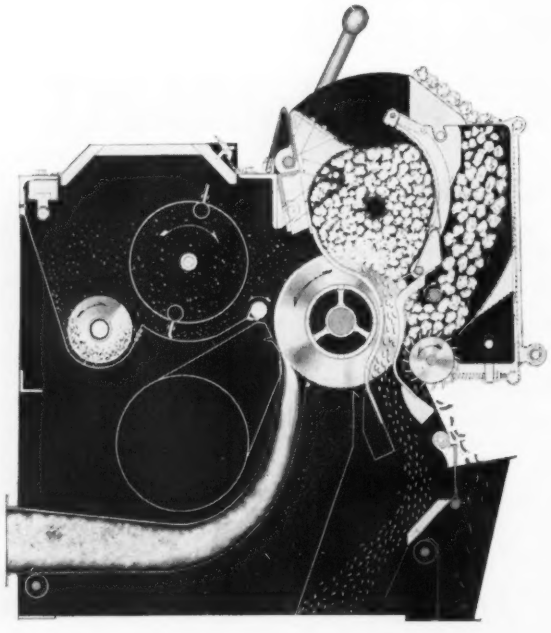
Here breeders are held back, for the time being, because no one can tell them what they should be aiming for specifically, in the way of new fiber properties.

For a great many years, the constant cry was for "more length and more strength." Cotton breeders have come through to fill this need in magnificent fashion. In fact, they've done such a good job in improving length and strength that it's now questionable how much further they need to go with these properties in most areas of the Belt.

The question of where they should turn now in seeking new fiber properties is very complicated. It is a question that the National Cotton Council, in cooperation with breeders and a number of other groups, is attempting to answer.

The job of developing breeding guides

(Continued on Page 67)



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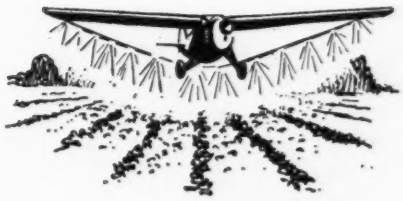

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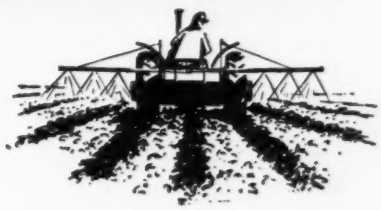

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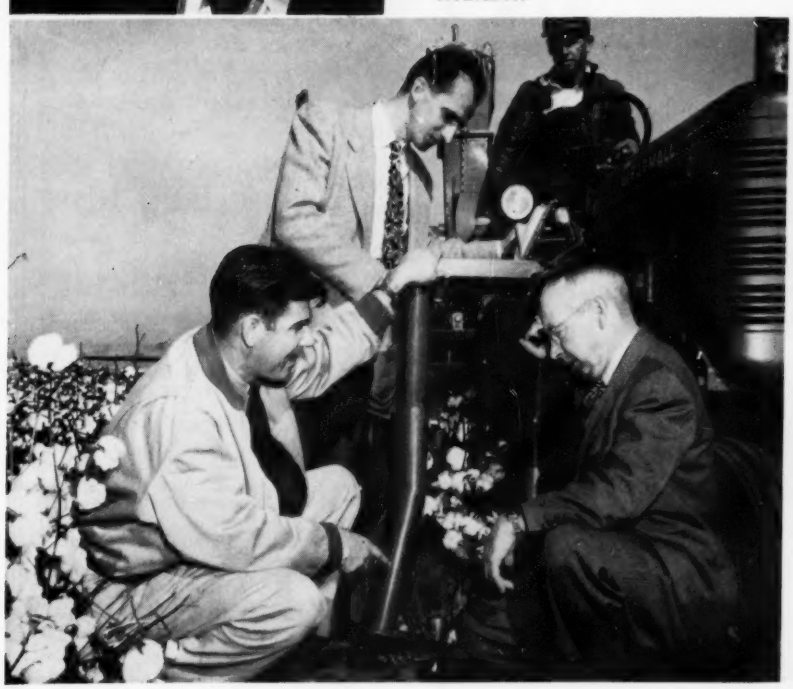
JOHN M. GREEN, left, Oklahoma Experiment Station and USDA, joins Don L. Jones, superintendent of the Lubbock, Texas Sub-Station, in examination of cotton breeding material on the Tropical Station near Iguala, Mexico.

LOUIS E. HAWKINS

THE improved brush type cotton stripper harvester. Left to right: W. J. Oates, professor of agricultural engineering, Oklahoma A. & M. College; R. H. Witt, inventor of the machine and then employed jointly by Oklahoma Experiment Station and USDA; and the late Horace Hayden who envisioned the Oklahoma Cotton Research Foundation and was its first secretary-treasurer.



— Better Practices —

The Miracle Of Modern Teamwork

The cotton industry in its recent achievements exhibits one of the most successful examples of voluntary teamwork in the world today.

THE COTTON INDUSTRY offers one of the most clear-cut examples of effective and successful teamwork to be found in the world today. The several integral segments of the industry that make up the National Cotton Council of America, working together for the common good of all, have made remarkable strides forward in the few years since the Council was formed.

This article is aimed at a discussion of recent advances in cotton production practices, primarily. Only one major facet of the Council's comprehensive program, that of its Production and Marketing Division, will be referred to directly, therefore. The Production and Marketing Division, headed by Claude Welch with the stimulating and enthusiastic backing of Executive Vice-President Wm. Rhea Blake, has effectively inspired and sponsored, wholly or in major part, the Beltwide Cotton Mechanization Conference and other annual and special conferences on insect control, defoliation, plant disease control, ginning problems and other critical phases of cotton production.

This Division of the Council is referred to here as the leader in this program of activities. It should be recognized, however, that the Division is the mechanism through which growers, chemical and fertilizer distributors, farm machinery trade, cotton ginners, federal and state research, educational and other groups join hands in a systematic, well planned and highly successful effort at driving ahead. The very capable and proficient staff members of the Division are key figures in this work, certainly, and merit highest praise from the beneficiaries of the program; but their success is achieved by exercise of wise leadership among the many complementary groups who thus are brought together for greater progress than could be realized had those groups worked independently of one another.

• **Advances Are Phenomenal**—Advances in the mechanization of the growing and harvesting of cotton in the past 15 years have been phenomenal. The spindle type picker began to be used about 15 years

(Continued on Page 80)

By LOUIS E. HAWKINS
Director, Oklahoma Experiment Station, Stillwater

Honored at Dallas

Estes Is National Ginner of Year

■ GEORGIAN receives trophy in recognition of current leadership in many fields.

W. J. Estes of Haralson, Ga., is National Ginner of the Year for 1955 and recipient of the Horace Hayden Memorial Trophy presented by the National Cotton Ginners' Association.

The Georgia ginning leader was selected by an impartial committee of representatives of allied organizations, from a list of state ginners of the year, on the basis of qualifications outlined under terms of the award program, which is an annual event stressing current activities on a local, state and national basis.

Estes was presented with the Hayden Trophy, given in memory of the late Oklahoma leader who served many years as president of the National Association, during the annual convention of Texas Cotton Ginners' Association in Dallas. During the annual meeting of the National Association, (See story and picture on Page 40.) Estes was elected second vice-president of that organization.

When Georgia ginners selected Estes as their state's outstanding ginner of 1955, for the second consecutive year, they called attention to his many services in community, state and national programs. Among these have been the following:

His many activities in his community make him outstanding as a citizen. His activities include membership in the Haralson Methodist Church, Mayor of Haralson, member of Coweta County Board of Education, director, Newnan-Coweta County Chamber of Commerce and a member of the Newnan Rotary Club.

Estes' business ability is not limited to the gin business, as shown by his other business interests. They include:

President of Empire Pedigreed Seed Co., which is distributor of registered Empire cottonseed.

President of Coweta Seed Co., which is distributor and grower of hybrid seed corn.

Owner, Esco Feed Mill, which manufactures various types of feed.

Owner, Esco Dry Cleaning and Laundry.

President, Citizens Bank of Haralson, Ga.

Director, Citizens & Southern Bank, Newnan, Ga.

Vice-President of Georgia Chemical Delinting Co.

Partner in Hutchinson & McGahee, general merchandise company.

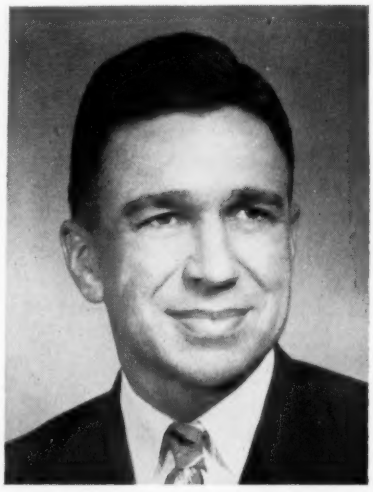
Owner Haralson Gin and Warehouse

Estes' services to the cotton industry are always given freely when he is called upon. He is at present: chairman of the Georgia Unit of the National Cotton Council of America; president of Southeastern Ginners' Council; ginner delegate to the National Cotton Council; ginner delegate to the National Ginners' Association from Georgia.

He is a past president of the Georgia Cotton Ginners' Association.

Shuman To Address NCPA Convention in May

The agricultural situation and its political implications will be the subject of an address by Charles B. Shuman, president, American Farm Bureau Federation, before the sixtieth annual convention of the National Cottonseed Products Association. Shuman will speak to the convention session on May 22 at the Statler Hilton Hotel, Dallas.



CHARLES B. SHUMAN

Shuman was born on a farm near Sullivan, Ill.

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RESEARCH PROVES TRAMP IRON IS MAJOR CAUSE OF GIN FIRES!

In an exclusive experimental program conducted and paid for by Eriez over a two year period, **it was proved beyond all doubt that tramp iron is a major cause of all gin fires. It was also proved that tramp iron could be effectively controlled by the proper installation of an Eriez HI-POWR Gin Magnet!** Especially developed for the ginning industry after extensive experimental testing, Eriez Gin Magnets were soon proving their value throughout the Cotton Belt. Fires and explosions were reduced drastically wherever they were installed; machinery damage and downtime virtually disappeared. Enthusiastic ginners wrote telling how production and profits increased after installation. Specify Eriez — the original manufacturer who introduced ... and alone proved the effectiveness of permanent magnets.

Eriez magnets give you this much MORE pulling power than other U.L. listed magnets:

Distance from magnet's face	CLASS I	CLASS II
2"	*63%	*58%
1½"	*70%	*53%
1"	41%	38%
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½"	23%	18%

*53 to 70% MORE STRENGTH in the flow area in which you operate!

NO COMPROMISE WITH QUALITY!

Because Eriez pioneered the development of permanent magnetic equipment for industry (and is today the world's largest producer of this type of equipment), its own standards were so high that the Gin Magnets produced by the company were **53 to 70% stronger** than minimum U.L. requirements. Eriez **could** reduce the quality and strength of its gin magnets and **still** meet U.L. standards, but it refuses to go back on its reputation of providing "the **finest** magnetic equipment available to industry."

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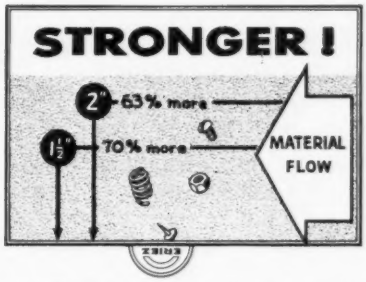
FREE! Gin Magnet Bulletin describing various types of Eriez HI-POWR Magnets for the ginning industry, and proper installation. Send for your copy **today.**

Look At These Advantages of Eriez HI-POWR Gin Magnets

All Eriez Gin Magnets are non-electric, self-contained. They have no wires or attachments. They require no electricity, cost nothing to operate and no maintenance is needed except occasional cleaning (self-cleaning models available). Powerful Alnico V magnetic elements are guaranteed **forever;** the first cost is the **only** cost.



This illustration shows the powerful magnetic field (a barrier against tramp iron) of an Eriez Gin Magnet. In a flow 2" from the magnet's face, the pulling power of an Eriez HI-POWR Magnet is 63% stronger than any other U.L. listed gin magnet; at a depth of 1½" this magnetic strength advantage is 70%! With an Eriez Gin Magnet you trap MORE metal ... get safer, SURER protection at no additional cost.

Protect yourself with an approved installation... and save money, too!

In addition to giving you the best tramp iron protection possible, Eriez HI-POWR Gin Magnets can save you money on insurance premiums. Tennessee and Arkansas already offer savings to ginners who use properly installed magnetic separators; throughout the rest of the Cotton Belt State Rating Bureaus are considering reduced rates where correct installations of magnetic equipment are made. **These steps are a result of Eriez' foresight and leadership in making original field test trials and spearheading the drawing up of approved standards of strength construction which established the pattern of submitting magnets for U.L. listing.**

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Although disease losses represent a very small portion of yield reductions, they are responsible for a three million bale loss in the past two years.

Texas Cottonseed Crushers' Association Photo

THE picture above shows the damage to leaves and bolls by Bacterial Blight. This disease sometimes reduces yield 25 percent and also lowers the quality of lint and seed.

The seven major cotton diseases listed in this article, in combination with other loss causes, result in a staggering yield reduction that is squeezing growers.

Methods To Reduce Our High Disease Losses

By P. J. LEYENDECKER, JR.
Head, Agricultural Services, New Mexico A. & M. College

IN THE PAST two years, U.S. cotton farmers have lost about 3,000,000 bales to diseases. This is the same as an additional yearly allotment reduction of 387,000 acres. Such a loss is only a very small portion of the over-all reduction in yield caused by insects, weather, and mechanical losses. When all these loss factors are put together, the resulting yield reduction becomes staggering.

Disease losses must be reduced if we are to continue to raise cotton and maintain high incomes on our capital investment. Many small and marginal cotton farmers are already feeling the squeeze. Research has found many control mesaures that the grower can adopt to reduce unnecessary losses caused by cotton diseases.

• **Seven Major Diseases** — In 1955, the seven major diseases of cotton in the U.S. caused a yield reduction of 1,706,334 bales. Extent of damage caused by each disease is shown in table 1, prepared by the cotton disease loss committee of the cotton disease council. Here are the diseases in order of importance and the latest control measures:

Seedling diseases are caused by many soil-borne fungi which thrive wherever cotton is grown. The severity of seedling diseases—damping-off and sore shin—varies from year to year, depending upon the climate. In 1955, damping-off in the U.S. caused an estimated 2.75 percent loss, or 363,533 bales. Because the seedling disease complex and the production of good cotton stands depend on so many things, the control of any one factor may not produce a stand. You'll get better stands, however, if you follow these steps:

First, plant only certified seed with a high germination percentage. Treat the seed with recommended fungicides to disinfest and protect the seeds from rotting in the soil under adverse conditions. Seed treatment also produces vigorous seedlings, which stand a better chance of surviving attacks by diseases. A well-prepared seed bed will help you get good stands. Don't plant too early because most seedling diseases are favored by cool soil temperatures.

Certain chemicals applied to the soil around the seed at time of planting will also increase seedling survival. This control method is still in its infancy, but the results warrant more testing on a regional basis, since the fungi causing stand failures vary from state to state.

PHILIP J. LEYENDECKER, JR.

California farmers report very good results with Dithane Z-78 applied as a spray at five pounds of wettable powder in 10 to 15 gallons of water per acre. The chemical must be applied with special equipment that can be easily made by the growers themselves. Producers who have tried Dithane Z-78 on large acreages are well satisfied with the results. They maintain that damping-off was kept to a minimum, and very little replanting was necessary. Extension personnel who supervised the California tests are very optimistic about the 1955 results.

Boll rots are caused by a host of fungi which decompose, destroy, or discolor the cotton fiber. Some of these organisms penetrate the bolls directly, while others follow wounds caused by other agents. The recent emphasis on the use of fertilizers and cultural methods to increase yields will increase the vegetative growth and leafiness of the cotton plant. But this, in turn, will bring about conditions which encourge boll rot.

In 1955, 2.75 percent, or 322,982 bales were lost to boll rots. Very little concern has been given to this malady, since the damage is not apparent until late in the season, when the cotton is being harvested. Then the misshapen mummified bolls and the discolored lint are very much in evidence.

• **Humidity Encourages** — Boll rot severity is aggravated by high humidity, rank growth, insect, and bacterial blight damage on the boll. The damage can be reduced by a number of practical operations. Over-fertilization should be avoided. Tall, heavily-leaved plants cut

(Continued on Page 75)

The Importance Of '56 Cotton Insect Control

By H. G. JOHNSTON
Head, Research Development
National Cotton Council

H. G. JOHNSTON

With boll weevils threating to launch the biggest attack in history this growing season, insect control, important any time, is a must in 1956.

ALL RECORDS indicate that the boll weevil may get the biggest start in history in developing its attack on the 1956 cotton crop. It seems almost certain that many more weevils will emerge from hibernation this spring than emerged in the previous record year of 1950.

Weather conditions during the summer and fall of 1955 were ideal for the development of an extremely large number of boll weevils. An abundant food supply for weevils (growing cotton plants left in the field) was available until frost in most sections and record numbers went into hibernation last fall. Surveys for hibernating boll weevils in all states showed three to seven times as many went into hibernation in the fall of 1955 as in 1954. At Tallulah, La. and Florence, S.C., where USDA has kept longtime records, the picture comes into sharp focus.

At Tallulah, where 19 years' records are available, an average of 13,443 live weevils per acre were found in woods trash. This is almost six times the average number recorded during the past 19 years and five times the number found in 1954. Furthermore, it is more than two and one-half times the greatest number found in any previous year on record. The average number for eight parishes in Louisiana was 9,621 weevils per acre.

At Florence, S.C. an average of 11,400 live weevils were found which is the greatest number found during the 13 years that records have been made. This number is about two and one-half times the average for the 13 years and is five times the average for 1954. The average number for six other counties in South Carolina was 8,260 weevils per acre or five and one-half times as many as in 1954.

• **Favorable Winter**—Winter weather in most sections has been favorable for a rather high percentage of these hibernating weevils to survive. If no more than 40 percent of the total weevils in hibrnation at Tallulah survive the winter, which is about normal, there will still be almost two and one-half times as many weevils to emerge as in 1950, which is the greatest number on record. These records for Tallulah and Florence are on the high side and do not indicate averages for the entire boll weevil area. The numbers are abnormally high, however, over a large portion of this area.

Winter survival of boll weevils is only half the story. The other half is dependent upon weather during June and July. Excess rains and cool weather could develop a tremendous population of boll weevils by mid-summer. Hot, dry weather could reduce this potential to a minimum. No cotton grower, in areas where a high winter survival exists, should wait to see what the weather may be in mid-summer before deciding what to do about boll weevil control.

There is no longer any reason to doubt that cotton insect control will pay dividends. Research, Extension demonstrations, and farmer experience across the Cotton Belt have shown conclusively that cotton insect control, when properly used, returns handsome profits. There are still many problems involved, however, in obtaining the most effective and economical control under varying conditions from year to year.

The relative importance of these problems becomes greater each year as more emphasis is placed upon the combination of improved practices for greater efficiency in cotton production. The rapid strides made toward complete mechanization of cotton production, in the past decade, demand more effective and more dependable insect control than ever before.

• **Effective Control** — Effective insect control is an essential part of any combination of improved practices. It cannot increase yields beyond the potential capacity of the soil nor improve the inherent quality of the cotton fiber or seed. However, inadequate insect control may significantly reduce the yield or greatly impair the inherent quality of the cotton produced. In fact, inadequate insect control can more or less completely nullify the advantages that might have been gained from all other improved practices.

It has been common knowledge for many years that some cotton insects, particularly the boll weevil and bollworm, are more readily attracted to vigorous, succulent, rapidly fruiting cotton plants than to less thrifty plants. For this reason any practice that promotes such plant growth can be expected to increase the insect problem to a certain extent. Increased fertilization, irrigation and other improved production practices which stimulate plant growth and development as well as increased yield potential will have a decided influence upon insect control requirements. Recent research at the Delta Branch Experiment Station has shown conclusively that this is the case.

In 1954, an experiment was conducted to show the influence of increased rates of nitrogen and irrigation on cotton yields where no insect control was used. The results of this experiment showed that the irrigated cotton produced less than one-half as much as the non-irrigated cotton. The reduced yields were attributed to insect damage. With no control of insects the population was much higher on the irrigated plots and the non-irrigated cotton, contrary to normal expectations, actually continued to bloom later in the season.

There is ample evidence to indicate that improved production practices that increase the yield potential will also increase the number of insecticide applications required for adequate insect control. It should be kept clearly in mind, however, that the additional applications will pay big dividends in protecting the investment already made in improved practices for increased per acre yields.

Too many cotton growers are reluctant to use more than six to eight applications of insecticides regardless of the number needed for adequate control. In an attempt to reduce the number of applications, the interval between applications is often extended to seven to 10 days when the interval should be four to five days. This practice is ineffective and will return but little net profit for applications made on such a schedule. An excessive number of applications is undesirable and will unnecessarily increase production costs, but to use less than the required number of applications may result in losses far greater than the total cost of adequate insect control.

Research in many sections of the Cotton Belt has consistently shown that the net gain per acre is in direct proportion to the number of insecticide applications required for complete control. One com-

(Continued on Page 77)

as viewed from The "PRESS" Box

• Feed Poster Available

A WALL POSTER, "Cottonseed Cake or Meal First Choice of Cattlemen," has been sent to cotton oil mills by NCPA Educational Service. Suitable for displays at mills, gins and feed stores, the poster tells of a survey in which more cattlemen reported that they feed cottonseed meal and cake than the next four major supplements combined. Additional copies are available from the Educational Service, 618 Wilson Building, Dallas 1, Texas.

• Rayon Promotion Hiked

RAYON ADVERTISING is being greatly increased this season by the American Rayon Institute in an effort to capture more of the markets held by cotton and other fibers. Advertising of rayon men's apparel will be more than doubled, while the biggest part of the total advertising budget of $1,310,000 will be spent by the Institute in promotion of rayon tire cord.

The Institute had a budget of $750,000 annually when it was started in 1953, and now has a budget of $2 million. In advertising home furnishings, a market in which rayon made gains last year, the Institute will spend about three times as much as it did in 1955.

• 3,000 Cotton Growers

THREE THOUSAND boys and girls in Georgia grew cotton last year as a result of the 4-H Club cotton production contest sponsored by the Cotton Producers' Association and conducted by Extension Service. That sounds like a record in the number of young participants in a cotton contest—or is it? The champion, Robert Clements of Madison County, produced 1,212 pounds of lint on one acre.

• Soybeans Up Again

SOYBEANS will show another big increase in acreage in 1956, if farmers carry out the planting intentions they reported to USDA. March intentions were to plant 21,800,000 acres of beans, alone, for all purposes. This would be 11 percent above last year's 19,700,000 acres, the previous record for beans.

• Butter Bests Margarine

BUTTER BUYING by housewives has been larger than a year earlier for 22 consecutive months, through last January, USDA estimates. January butter purchases were 1.5 percent larger than a year earlier, while margarine buying was about four percent below the same month of 1955.

Total purchases of margarine for household use during January, 1956, were estimated at almost 100 million pounds, about four million pounds below the purchase level reported in January, 1955. The reported percentage of all families buying margarine during January 1956—about 60 percent—was down three percentage points from a year earlier. Those families buying margarine continued buying larger average amounts per purchase—just over 1.5 pounds—but they were buying less frequently than a year earlier.

During April 1955-January 1956 household purchases of margarine were almost four percent larger than in the corresponding period a year earlier. In the preceding 12 months, April 1954-March 1955, purchases of margarine for home use had been three percent greater than during April 1953-March 1954.

• Sex and Bloat Control

SCIENTISTS now believe that they can control sex and bloating among animals. William Seltzer of Hawthorne, N.J., has been granted a patent on a method of treating eggs to control the sex of baby chicks. To get female chicks, he wets fertile eggs in a solution containing a female hormone, while male chicks are produced by using a male hormone. Seltzer reports 98 percent or better control.

Bloating among cows on clover can be reduced by use of small doses of penicillin, according to Dr. B. F. Barrentine of Mississippi State College. He's working on a process to mix the penicillin with salt, so that cows won't have to be given the medicine in capsules.

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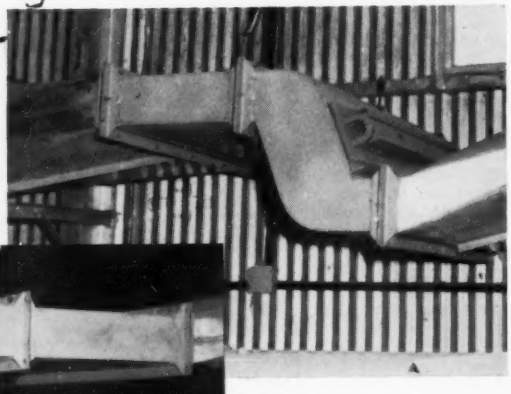
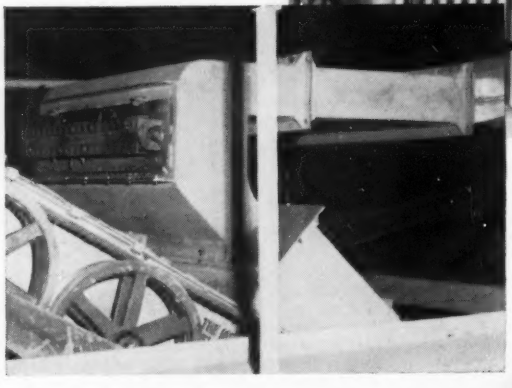


→ Standard Type "U" Magnet Adapter installed at Fleming & Son Gin, Hub, Texas.



← 135° reverse Type "U" Magnet Adapter installed at Shepard Gin Co., Hart, Texas.

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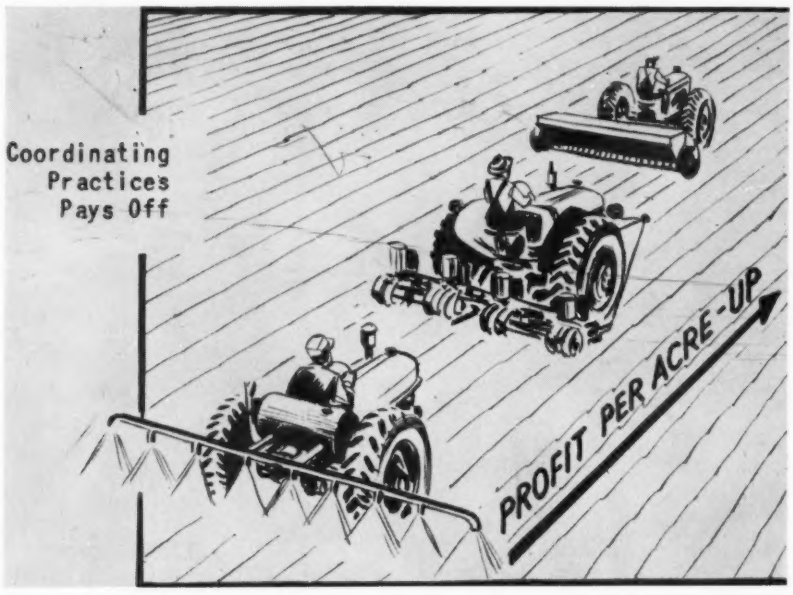

Good Fertility Use Is a Big Factor in Upped Output

Farmers planted their smallest cotton crop in history last season with only nine percent decline in yield from the largest ever planted. Good use of fertility helps to explain the small decrease.

By JOHN R. PAULING
Agronomist, USDA, Washington

IN 1925 American cotton farmers planted their largest crop ever, 45,968,000 acres. In 1955 they planted their smallest since 1884 — only 17,489,000 acres. Yet production dropped only nine percent; from 16,105,000 bales in 1925 to 14,663,000 last year.

There is material here for a number of stories. But a most remarkable one is the ability, here demonstrated, of the American farmer to raise his productive output. And who can say the limit has yet been reached? Who would say 30 years ago that we could ever cut the cotton acreage 62 percent, reducing the total yield only nine percent?

Even at a glance it is evident that many factors contributed. Yet good use of fertility, whatever its form, is accepted to be a major one. It is the purpose of this article to point out in broad terms some the ways in which the improved use of fertility has contributed to the increase in cotton output.

• **Good Practices Work Best in Teams**—Farmers increasingly recognize that any good practice they might install serves best only when hitched with other good practices. Seldom if ever will an isolated improvement have full effect.

We might take, for example, the decision to use better seed. While this alone will likely help, it will not make the difference it could if the seed were planted on unwisely chosen land, on a poor seedbed, or if insect control, good cultivation, or other needs are neglected. Good farming practices have a way of supporting each other. In the farmer's language, getting a fire going is easier done with many sticks than with a single one. In the scientists' terms this is a form of interaction.

Cotton farmers have steadily fitted together more—not fewer—good practices. In doing so they have put bigger teams to work that can accomplish more. This being true, it would be very difficult to single out any one practice and measure its influence precisely. We can, however, trace an improvement and point out what and how it contributed.

• **Choice of Cotton Land**—Viewed either from the standpoint of the individual

(Continued on Page 78)

IN THE LEFT picture, W. A. Thomas (left) of Goodman had the highest yield of three and six-tenths bales per acre in the 1955 Mississippi Five-Acre Cotton Contest. The picture was taken as he examined good results of late poisoning with W. R. Sullivan, Lexington, county agent. On the right is the author, John Paulling.

W. B. ENNIS

Better Practices

Improved practices, such as weed control, will help the grower lower production costs and enable him to realize more profit per acre.

Status and Outlook For Weed Control[1]

By W. B. ENNIS JR.
Field Crops Research Branch,
USDA, Beltsville, Md.

IN ORDER for cotton to gain a firmer competitive position, the needs are great for more research effort to increase efficiency in production and utilization of the crop. Improved practices that hold promise of lowering production costs should be of immediate interest to cotton growers because of the opportunity to realize more profit per acre.

Even though there have been marked improvements in cultural methods of controlling weeds, the removal of weeds still represents a large cost item in the production of cotton in the humid portion of the Cotton Belt. It has been estimated that costs of controlling weeds represent from 25 to 35 percent of the total pre-harvest production costs to cotton growers in Southeastern U.S. Moreover, weed control accounts for approximately 60 to 70 percent of the total man hours required to produce cotton with standard cultivation practices, hand hoeing and machine harvesting. Accordingly, considerable research has been directed toward lowering labor requirements and out-of-pocket costs of controlling weeds. Within the last six years considerable progress has been made in developing combination chemical and improved cultural practices to reduce substantially the hand labor requirements and costs of producing cotton. Additional advances can be expected within the next 5 to 10 years.

Changes in Cultural Methods

One of the more notable advances in controlling weevils by cultural methods has been the growing popularity of cross-plowing on certain of the level cotton plantations of the Midsouth Cross-plowing normally reduces materially the amount of hoeing required for weed control and has shown some promise for keeping Johnson grass under control. Moreover, cross-cultivation is highly compatible with flame cultivation to control late-season weeds. Recent research has shown that the use of either a pre-emergence herbicide or a single post-emergence oil treatment virtually eliminates the need for hand hoeing of annual weeds in the hill and adds an insurance factor against development of serious weed infestations following prolonged rainy weather.

The disadvantages of cross-plowing are (1) more planting seed are required per acre, (2) erosion problems are created where slopes are excessive, (3) cannot be used with furrow irrigation in fields with side slopes, (4) mechanical picker efficiency is reduced significantly and (5) in the absence of herbicidal treatments annual weeds frequently infest the hills, and their removal by hoeing may be damaging to the cotton.

In spite of these disadvantages, the use of either pre- or post-emergence herbicides in combination with cross-plowing and flame cultivation is expected to increase in the level cotton lands of the lower Mississippi Valley and possibly in other adapted areas.

Chemical Control Combined With Cultural Practices

Current information indicates that combinations of a pre-emergence herbicide and post-emergence oil opplication have most promise for reducing hoe labor requirements. Weeds on the top of the cotton row are controlled chemically and those in the middles between the rows are controlled by cultural methods.

• **Pre-Emergence Treatments** — Single nozzles directly behind the planter presswheel are used to spray bands 12 to 14 inches wide centered over the drill area. Although special wide rollers drawn behind the planter wheel have been found useful for increasing the smoothness and firmness of seedbeds, work done in 1954 and 1955 has shown that equally good weed control is achieved by treating rows planted with conventional planter presswheels and those rolled with large flat rollers. Work has also shown that the amount of water required to spray the pre-emergence herbicide isopropyl N-3-(chlorophenyl) carbamate (CIPC) can be reduced from one gallon to one-half gallon per inch of band treated. This finding implies

(Continued on Page 62)

OUTSTANDING WEED CONTROL in a cotton field following an excellent job of seedbed preparation, pre-emergence band application of CIPC, and post-emergence middle cultivation.

[1] Adapted from a paper read at the Charter Meeting of the Weed Society of America in New York City, January 4-5, 1956.
[2] Marketed by several companies under various tradenames.
[3] Marketed as "Karmex" DL and "Karmex" DW.
[4] Marketed as "Karmex" W.

• Compress, Warehouse Operators To Meet

PRACTICAL warehouse operations, featuring efficiency through mechanization, will be stressed on the program for the annual convention of the National Cotton Compress and Cotton Warehouse Association, John H. Todd, executive vice-president and general counsel, Memphis, has announced. The meeting is being held April 12-13 at the Galvez Hotel and Villa in Galveston.

Harris F. Underwood is president of the organization; Alfred Bessell, Jr., vice-president; Rufus Mock, treasurer; and Louise Paine, secretary.

Program and special purpose committees will meet on the morning of April 11 to complete their recommendations to the board of directors and membership, and lunch will be served to the group at noon. During the afternoon the recommendations will be presented to the board.

A public session will be held on the morning of April 12, and a closed business session for the membership is scheduled for the morning of April 13. Both afternoons will be devoted to the equipment show at the Galveston Pleasure Pier.

Social events will include a bus tour, luncheon and style show for the ladies on April 13, and a reception given by Galveston Cotton Exchange and the annual banquet on April 12. A seafood dinner is scheduled for April 13.

■ **LOPI BROWNFIELD is the new manager of La Sari Gin Co., La-Sari, Texas.**

Maid of Cotton Visits Laboratory

MAID OF COTTON Patricia Anne Cowden is shown at the Southern Regional Research Laboratory with Dr. C. H. Fisher, left, chief of USDA's Southern Utilization Research Branch; and Mason DuPre', assistant to the chief. They are discussing the advantages of a fabric especially designed and woven to meet requirements of the Defense Department for a lightweight cotton which is highly resistant to wind and water. This fabric was woven by means of a special loom attachment developed by the Southern Utilization Research Branch.

■ **VICTOR K. LA MER ,professor of physical chemistry, Columbia University, is receiving the $1,000 Kendall Award in Colloid Chemistry on April 9 at the American Chemical Society national meeting in Dallas.**

Danes Export Less Lard

Denmark, largest European lard exporter, shipped abroad 33,800,000 pounds in 1955. This was eight percent less than in 1954, USDA says.

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A Practical Approach to a Profitable Cotton Crop

One of the most important meetings of interest to cotton producers is the Beltwide Cotton Production Conference held in Memphis. In a speech at that meeting, Dr. Fred C. Bishopp passed along these nine points on better farming practice. Dr. Bishopp for many years was assistant chief in charge of research, Bureau of Entomology and Plant Quarantine, U. S. Department of Agriculture. Now retired, Dr. Bishopp has been an authority on insects affecting cotton for nearly a half century. This nine-point program advanced by Dr. Bishopp is of such importance that it is being published in the public interest.

1. "Gather the present crop as soon and cleanly as possible, destroy the stalks, and turn under the debris. Use effective stalk shredders, or graze the crop heavily if livestock are available.

2. "Plant well adapted varieties in well prepared soil as early as consistent with local conditions. Uniform planting period throughout a community is highly desirable.

3. "Treat the seed for disease control.

4. "Plant cotton as far as possible from good weevil hibernation quarters.

5. "Do not fertilize too heavily nor irrigate too late.

6. "Strive for an early and full set of fruit. This means control of early season pests such as thrips, fleahoppers and other insects that retard growth and delay fruiting; also boll weevils if especially abundant.

7. "Apply insecticides as recommended by state authorities both as to kind, application schedules and dosages. Remember that rank stalks and heavy foliage require more material than small plants of open growth. When applying insecticides do not underdose.

8. "Keep a close watch for insects in every cotton field. Thorough inspections should be made at regular and frequent intervals, either by the farmer himself or by a competent scout.

9. "A community-wide fight against the boll weevil, and a number of other insects as well, is of great value to all, especially in bad insect years."

NX56-2

Agricultural Chemicals Division
Naval Stores Department
HERCULES POWDER COMPANY
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Proper Defoliation of Cotton

Efficient and economical use of defoliants in harvesting of cotton is a new, but imposing problem in most of the cotton growing areas as the recent advent of mechanical harvesting replaces hand picking.

By E. D. COOK

Agronomist, Blackland Experiment Station, Temple, Texas

THE CHANGE from hand harvesting of cotton to machine harvesting is now taking place in the Blackland area of Texas. Only a few years ago the cotton in this area was all hand picked. Then harvesting changed from hand picking to hand pulling. This change is so complete that now very few hand picked bales of cotton are carried to the gins.

A change from pulling to stripper harvest is now taking place. According to the County Agents' reports for Texas there were 18,877 cotton strippers and 1,532 spindle type cotton pickers in Texas in 1954. This is an increase of about 25 percent from 1953. The report also shows about 20,000 strippers and 1,550 pickers in Texas in 1955. If the trend continues, in a few years most of the cotton in the Blackland area will be stripper harvested.

The change from hand pulling to stripper harvest has already taken place in the High Plains. The change from hand picking to machine picking has taken place in the Lower Rio Grande Valley and in other irrigated areas.

The mechanical harvesting of cotton has been brought about by several factors. The necessity for lowering cost of production, a shortage of labor for harvesting and aid in insect control are the big factors in making the change.

E. D. COOK

• **Defoliation** — A key part to mechanical harvesting of cotton by either stripper, spindle type picker, or efficient hand harvest in some cases is a good cotton defoliation program. There has been a general acceptance and widespread use of pre-harvest chemicals over the entire Cotton Belt.

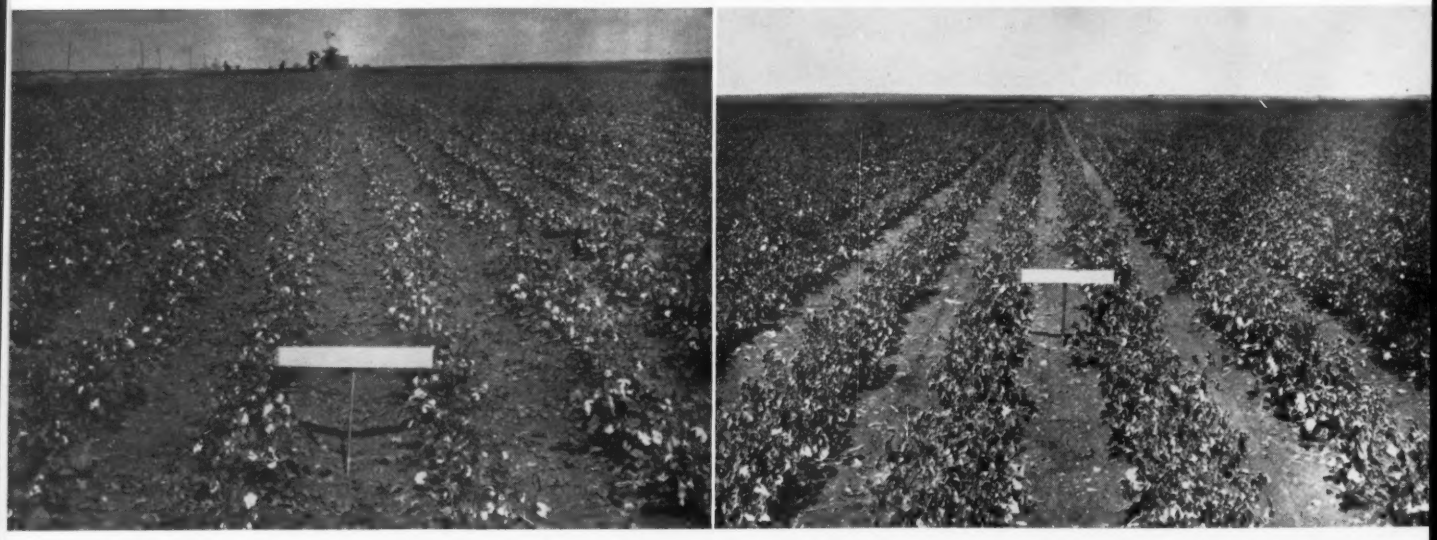
There was a definite increase in the use of defoliants and desiccants in 1955 over previous years. The indications are that each year there will be an increase in sales of pre-harvest chemicals, since progress has been made in understanding the factors that influence the success or failure of these chemicals. The known factors such as rate and volume of chemicals, method of application, fertility of the soil, plant density, varietal response, cultural practices and climatic factors such as moisture, temperature and humidity have a part in defoliation or desiccation.

There are two types of chemicals used in defoliation work. One type is used as a true defoliant to drop the leaves from the stalks (see picture on left). The other type is used as a desiccator that kills and dries the leaves, with only a small percent of the leaves dropping off (see picture on right).

Defoiliation is a definite aid to mechanical picking of cotton but not absolutely essential. But to harvest cotton with a stripper, defoliation or desiccation is essential. When mechanical pickers are used, a good job of defoliation results in an increase in picker efficiency, reduces the amount of green leaf and pin trash, makes possible an earlier harvest, and reduces the population of

(Continued on Page 68)

ON THE LEFT is shown cotton at Hillsboro, Texas, after the application of a true defoliant five days previous to the picture. There are still some green leaves, but these were removed with a desiccator before stripper picking. The defoliant was about 90 percent effective. On the right, also at Hillsboro, a field showing results of a desiccator applied five days before the picture. There was 100 percent leaf kill. The material was applied at three quarts an acre.



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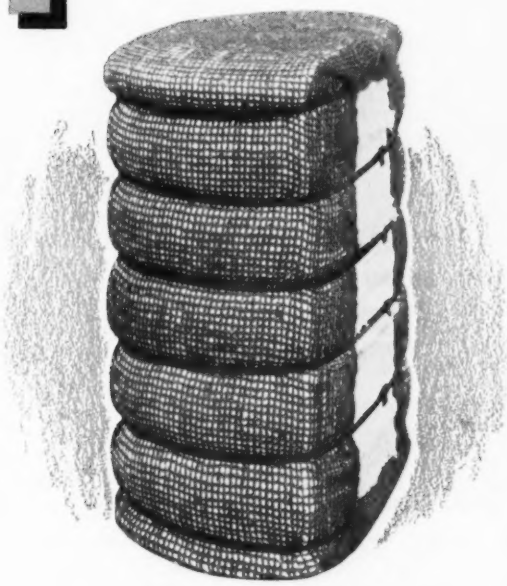

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In Preventing Fires

Magnet Standards Will Help Gins

■ **INDUSTRY groups, insurance inspection bureaus and others cooperate in new action.**

Standards have been promulgated for the use of magnets in cotton gins—an action that should prove of wide value in reducing the losses from fires at gins and greatly increase the use of magnets in the ginning industry.

Ginners' organizations are working with regulatory organizations in the individual states to re-evaluate insurance rates in the light of this additional fire protection.

The standards represent the culmination of a long program of cooperative work by insurance inspection bureaus, magnet manufacturers, ginners' associations, the National Cotton Council and others. Final step in the program has been the listing by Underwriters Laboratories of magnets of several manufacturers and specifications for the most effective location in cotton gin equipment.

Many organizations and individuals, including the special fire prevention committee of the cotton industry and other committees, have worked together in the careful evaluation which preceded the final action.

Leaders at Processing Conference

A FEW of the leaders who participated in the Cottonseed Processing Clinic at New Orleans are shown here: left to right, H. D. Fincher, Anderson, Clayton & Co., Houston; E. F. Pollard, USDA, New Orleans; M. H. Fowler, Buckeye Cellulose Corp., Cincinnati; M. C. Verdery, Anderson, Clayton & Co., Houston

The standards are listed in this article, and are being distributed in printed form by the insurance inspection bureaus of the cotton states. These are the organizations which made available in February, 1955, through ginners' associations and their own offices the bulletin, "Fire Prevention and Protection As Applied to Cotton Gins," which most gins now have. Additional information is available from these organizations, magnet and gin machinery manufactur-

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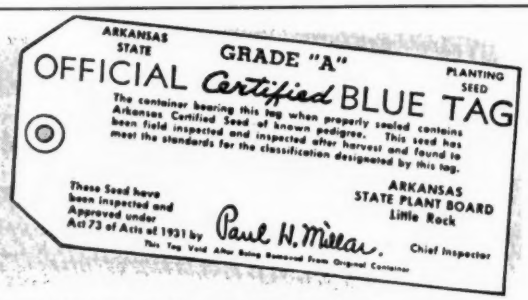
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ARKANSAS SEED GROWERS ASSOCIATION
P. O. Box 332 — Little Rock, Arkansas

ALL ARKANSAS CERTIFIED SEED GROWN FROM REGISTERED SEED STOCK ONLY

ers and ginners' associations.

The following standards represent a revision of, and replace, the information on magnetic separators that appears on Page 10 of the booklet, "Fire Prevention and Protection as Applied to Cotton Gins," published in February, 1955, by Insurance Inspection Bureaus of the Cotton Growing States.

General

Magnets are considered satisfactory for recovery of tramp ferrous metal only when installed in locations as specified herein and when complying with requirements of strength and size as stated.

General Requirements

1. Only those magnets listed by Underwriters' Laboratories, Inc., as CLASS 1 or CLASS 2 shall be acceptable.
2. Gin plants in which magnets are installed shall be arranged so that all cotton will pass the magnet as far ahead of machinery as possible. It is preferable that any by-pass be omitted between the wagon cotton suction line and point at which the magnet is located.
3. The length of the magnet shall not be more than 2 inches less than the width of the equipment in which it is installed.
4. Magnets shall be so arranged in the machinery that cotton will impinge on the face of the magnet or will be carried closely across the face of the magnet.

Location

1. Tower Drier — Transition from Tower Drier.

When more than one drier is installed, magnet shall be in the first drier.

When installed in drier, magnet shall be located in the lower part of the drier, preferably on or at the rear of one of the lower four shelves.

When installed in the transition piece, magnet shall be so located that all cotton shall impinge on or pass as close as possible to the face of the magnet.

Magnets 36 inches long or longer may be CLASS 1.

Magnets 26 to 36 inches long shall be CLASS 2.

2. Air Line Installations.

Magnets installed in air lines shall be restricted to the following general locations:

(1) After the air line cleaner.
(2) After reel driers.
(3) After conveyor driers.

Magnets installed in locations specified in (1), (2) or (3) shall be CLASS 2 when length is 26 to 45 inches (per magnet).

Magnets installed in locations specified in (1), (2) or (3) shall be located in or behind suitable transitions to provide complete spread of cotton over entire length of magnet.

Accessibility

Magnet shall be placed in machinery so that it can be easily cleaned and face of magnet observed when gin is in operation. This will require hinging of the device to the machinery in which it is installed and observation ports be provided. The installation shall not be more than 5 feet above floor, platform or other permanently located walkway.

Care and Maintenance

Magnet shall be inspected and cleaned of collected metal several times daily.

Installation and Tests

Installation shall be made only in accordance with manufacturer's recommendations and preferably under his supervision. Manufacturer should consult inspection bureau having jurisdiction for proper arrangement and test procedure before installation.

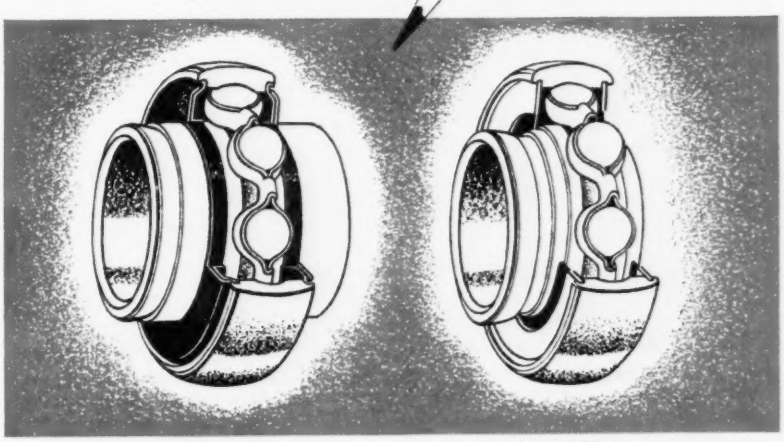
■ **MILTON HORNUNG, formerly at Three Rivers, Texas, is managing Farmers' Gin Association at Los Fresnos, Texas.**

Falls Featured in Safety Campaign

The National Safety Council will soon begin an intensive nationwide campaign to focus the attention of management and workers on accidental falls. Falls were singled out for emphasis because of their number in the total accident picture. Except for traffic accidents, falls cause more accidental deaths than anything else, and a great number of disabling occupational injuries which result in costly compensation payments. In addition to their numerical importance, the Council chose falls because they can be prevented voluntarily by the individual. Most falls were caused by the carelessness of the person who fell.

preference points on power transmission units

A Choice of **EFFECTIVE SEALS**



Slinger Type — Contact Type

Today you can reduce the maintenance costs of your machines more effectively through the application of Fafnir Power Transmission Units equipped with either slinger type or contact type seals. Both types are prelubricated at the factory with long-life, completely filtered grease. Relubrication, therefore, is no longer a requisite, and cleaner bearing operation is assured.

Fafnir Plya-Seal and Mechani-Seal Bearings are equipped with the famous Fafnir Self-Locking Collar—easiest of all to install. Counterbored, eccentric cam, mated-construction of collar and inner ring assures positive locking action without lock nuts, or adapters. Inner rings are bored to inch dimensions to fit standard shafting and slip-fit into place. For complete details, consult your authorized Fafnir Distributor or write The Fafnir Bearing Company, New Britain, Conn.

Pillow Blocks (Cast Iron) Standard and Heavy Series.

Flange Cartridges (Cast Iron) Standard and Heavy Series

FAFNIR
BALL BEARINGS
MOST COMPLETE LINE IN AMERICA

In order for cotton to remain strong in our agricultural economy, farmers may have to take a market price reduction. With acreage cuts, the answer to profit making is reduced production costs while gaining bigger yields.

1956 Farmer's Slogan More Cotton for Less

REX F. COLWICK

A LAND LEVELER, shown in the picture on the left, will do a good job of smoothing uneven land which will pay off in row uniformity on terraced as well as flat land. More of the high-clearance sprayers, shown on the right, are coming into use on cotton farms of the South for insect control an] defoliation.

FARMERS are going to do something about the cotton situation in 1956! They don't have to be organized nor do they need to become involved in political controversy to do it. The individual farmer will not find a new use for cotton, will not conduct a promotional campaign, nor solve the surplus problem; but he will simply do his best to produce *more for less.* By so doing he will assure himself a profit and help put cotton in a better competitive position.

The industry suggests that an eventual price reduction will be necessary if cotton is to remain strong in our agricultural economy. This will put the cotton farmer in a difficult position unless he can reduce his cost of production and thereby maintain his margin of profit. Labor for cotton production is not getting more plentiful even though the acreage is drastically reduced; so the answer, as far as the farmer is concerned, must be more efficient production through mechanization. This premise is in contrast to a gloomy outlook for the future of mechanization held by some.

• **1956 Mechanization Intrenchment** — Admittedly, mechanization will not surge ahead at a rapid rate of expansion in 1956. There will probably not be a great number of mechanical harvesters sold nor will the number of tractors with equipment on cotton farms increase appreciably. Rather than a year of major advances in mechanization, I believe 1956 will be a year of intrenchment for mechanization. As Dr. William L. Giles, Superintendent of Mississippi's Delta Branch Experiment Station said in his talk before the First Annual Cotton Production Conference last December, "The important thing we should remember is to give continual thought to ways new practices can be integrated and what influence they may have on production efficiency." The intrenchment of mechanization will be a consolidation of gains resulting from better integration of improved production practices which have been proven through research but not universally applied. That means that the better farmer will make a determined effort to plan each production step so that it is done in the best way to fit in with the succeeding steps in his production plan.

The better farmer will not delay making plans for harvesting mechanically until the cotton begins to open, but he will begin planning when he chooses the land for his cotton. He will choose a field with a uniform slope if possible. If it is in flat land, he will do his best to improve the drainage and uniform topography by land forming to eliminate low, wet spots which delay all machine operations. Land forming is a standard practice in irrigated areas. Even in hilly land, a land leveler used betwen terraces will do a beautiful job of smoothing which will pay off in row uniformity. The better farmer in hilly land will also look at his terrace and row layout with a critical eye, because many old terraces were laid out for mule farming and can be changed to

(Continued on Page 60)

By REX F. COLWICK
Agricultural Engineer, USDA, State College, Miss.

• Ginners' Field Day Set at Chickasha

GINNERS of Oklahoma and the Southwest will have an opportunity to obtain the latest information on cotton production, harvesting and ginning on April 17 at the Ginners' Field Day at the Oklahoma Cotton Research Station east of Chickasha.

The tentative program calls for discussions of cotton topics in the morning, a barbecue at noon, and an afternoon devoted largely to inspection of the research projects. The program starts at 9:30 a.m.

John Green, cotton specialist, will discuss cotton varieties for Oklahoma; and Jay Porterfield and Ed Smith, engineers, will review developments in planting cotton to a stand and harvesting.

Cleaning and ginning research will be outlined by Warren Taylor, ginning engineer.

Claude L. Welch, Memphis, National Cotton Council, will make a talk on the key position of the ginner in the cotton program; and Dr. O. S. Willham, president of Oklahoma A. & M., will speak.

Grisham, Stangel, Holden Honored by Chamber

Ray Grisham, Western Cottonoil Co., Abilene; Dean W. L. Stangel, Texas Technological College, Lubbock; and William Holden, Fort Worth Chamber of Commerce manager, were honored as "Top West Texans" at the annual convention of West Texas Chamber of Commerce recently. Grisham was president of the regional chamber during the past year.

• Buckeye To Double Mill's Capacity

THE Buckeye Cellulose Corp. has announced a major expansion of its cellulose pulp mill at Foley, Fla., which will double the mill's production by mid-1958.

Executive Vice-President Walter L. Lingle Jr. of Procter & Gamble said the company has appropriated more than $20 million to add a new cellulose pulp production unit at the mill. Production capacity of the mill will be increased to 240,000 tons of pulp per year, and pulpwood usage will increase to 1,700 cords per day, he said.

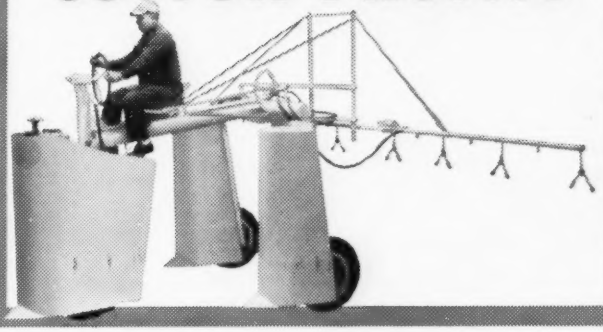
"These new facilities will give Buckeye Cellulose a new production unit which can be operated independently of the existing mill and will provide a second source of high quality pulp from either pine or hardwoods," Lingle said. "Operation of the two separate units will facilitate shipping schedules for customers requiring a variety of finished product specifications."

Preliminary schedules anticipate the beginning of construction in late 1956, with completion during the first half of 1958.

Boswell Scholarships

The Colonel J. G. Boswell Scholarships have been established for one boy and one girl graduate of Corcoran, Calif., High School. They will cover tuition, books, board and room and other incidentals at the school of the recipient's choice.

INCREASE YOUR COTTON PROFITS



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insures your crop from planting to picking

6½' boom clearance for tallest crops

15 HP motor . . . more power, more acres

Four speeds for any field requirement

10/24 drive wheel for power, flotation

Rear wheels adjust for 36" to 42" rows

Protective fenders on all wheels and tanks

120 gallon tanks located over wheels for perfect balance

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All controls within reach of driver

Spraying for insect, weed and disease control is essential for top profits. This all-new Finco self-propelled, high clearance sprayer gives you the greatest control of spray and the highest efficiency at the lowest cost. Regardless of weather or field conditions, you spray when it fits your schedule and crop condition, thus protecting your crop from pre-immergence through full growth. Truly versatile, too, for spraying row or field crops, adaptable for crop dusting, ideal for early seeding of cover crops and an excellent unit for all auxiliary farm spraying needs.

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Finco COT-N-KING SELF-PROPELLED HIGH-CLEARANCE SPRAYER

Produced in the Cotton Belt

Finco, Inc.
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Greenville 1, Miss.

Please send complete information on the COT-N-KING

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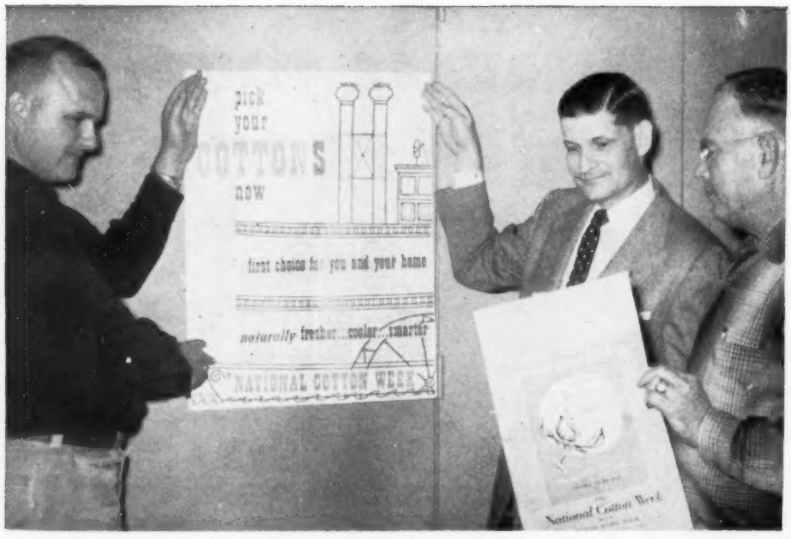


Waco Leaders Planning Cotton Week

WACO LEADERS are shown here planning extensive observance of National Cotton Week, May 14-19. Left to right are Ed McKay, County Agent; W. L. Goble, Jr., manager of Brazos Valley Cotton Oil Mill and head of the Chamber of Commerce cotton committee; and Ralph Russell, agricultural manager for the Chamber of Commerce. Dick Yeager, National Cotton Council field representative, is working with businessmen of the Texas city on their Cotton Week plans.

Hartz Goes to Japan For Soybean Group

Marion Hartz of Stuttgart, Ark., left the U.S. by plane April 5 for Osaka, Japan, where he will represent the American Soybean Association at the Osaka Trade Fair during April, George M. Strayer, executive vice-president of the Association, has announced.

Hartz, vice-president of Jacob Hartz Seed Co., will be in charge of an exhibit of American soybeans and soybean products at the Fair. Ersel Walley, Fort Wayne, Ind., former president of the American Soybean Association, flew to Japan on March 19. He was in charge of the erection and staffing of the exhibit, and is now meeting with Japanese trade groups of the soybean industry pertaining to a program of market development on soybeans under Public Law 480.

The exhibit, sponsored jointly by the American Soybean Association and the Foreign Agricultural Service of USDA, features the availability of American soybeans, the higher oil content as compared with shipments from other parts of the world, and demonstrates the place of soybean food products in supplementing the high rice diet of Japanese people.

Soybeans for Arizona

A goal of 50 bushels of soybeans per acre is attainable in Arizona and the Imperial Valley of California, growers were told at the recent Vegetable Oilseeds Conference at Imperial, Calif., The Arizona Farmer-Ranchman reports Dr. E. E. Hartwig, USDA soybean leader, Stoneville, Miss., addressed the group of about 150 persons.

Oilseed processors and others say that Arizona plantings of soybeans may increase from 4,000 acres last year to as high as 25,000 in 1956.

■ **LAMAR ALLEN has been appointed manager of The Southern Cotton Oil Co. mill at Dawson, Ga., succeeding the late Frank A. Graham. Allen, well known in the crushing industry, has been connected with the company since 1919 and the Dawson mill since 1924.**

Buckeye Office Moves

The Cotton Oil Division of Buckeye Cellulose Corp. has moved its Southern District Office to Bank of Georgia Bldg., Room 617, 1428 W. Peachtree, N.W., Atlanta.

Cotton Style Show Planned For Valley Cotton Week

A cotton style show is planned as part of the Lower Rio Grande Valley Cotton Week activities, which will open with the arrival of the nation's first bale of 1956 U.S. grown cotton. This is the second annual Valley Schools Cotton Style Show and will be presented by FHA and homemaking students of all junior and senior high schools in the four Valley counties.

Homemaking teachers from Valley schools voted to repeat last year's highly successful Valley Schools Style show, and elected Mrs. Annabel Jordan of Harlingen as chairman, with Mrs. Lula P. Creasy of Harlingen as co-chairman.

The Valley Schools Style Show will be held in the Harlingen Municipal auditorium, approximately one week after the nation's first bale reaches Harlingen.

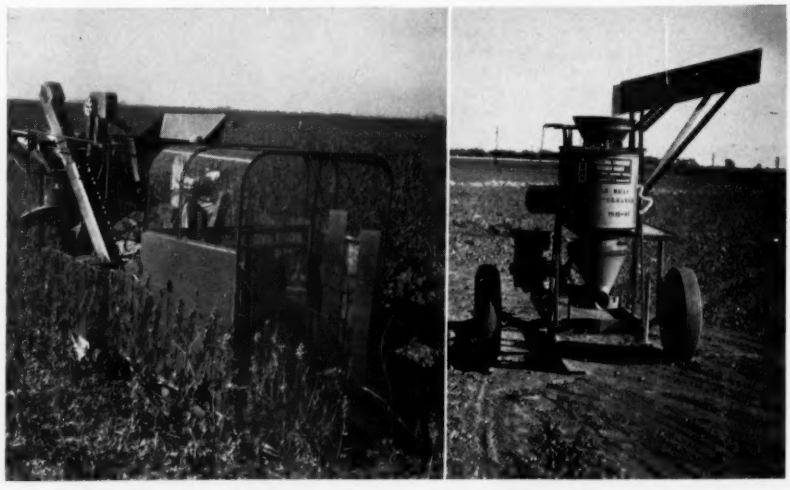
Buckeye Announces Changes In Pulp Mill Posts

Buckeye Cellulose Corp. has announced that Dr. C. B. Weiss has been appointed to the new post of wood pulp sales manager and that P. S. Moore, Jr. will succeed him as superintendent of the Buckeye pulp mill in Memphis. The appointments are in line with the corporation's expansion in the pulp industry.

Doctor Weiss has been superintendent of the Memphis plant since 1947. He will now be in charge of sales and market development at the pulp mill in Foley, Fla., which is being enlarged to double production. He has been with Buckeye in Memphis 23 years.

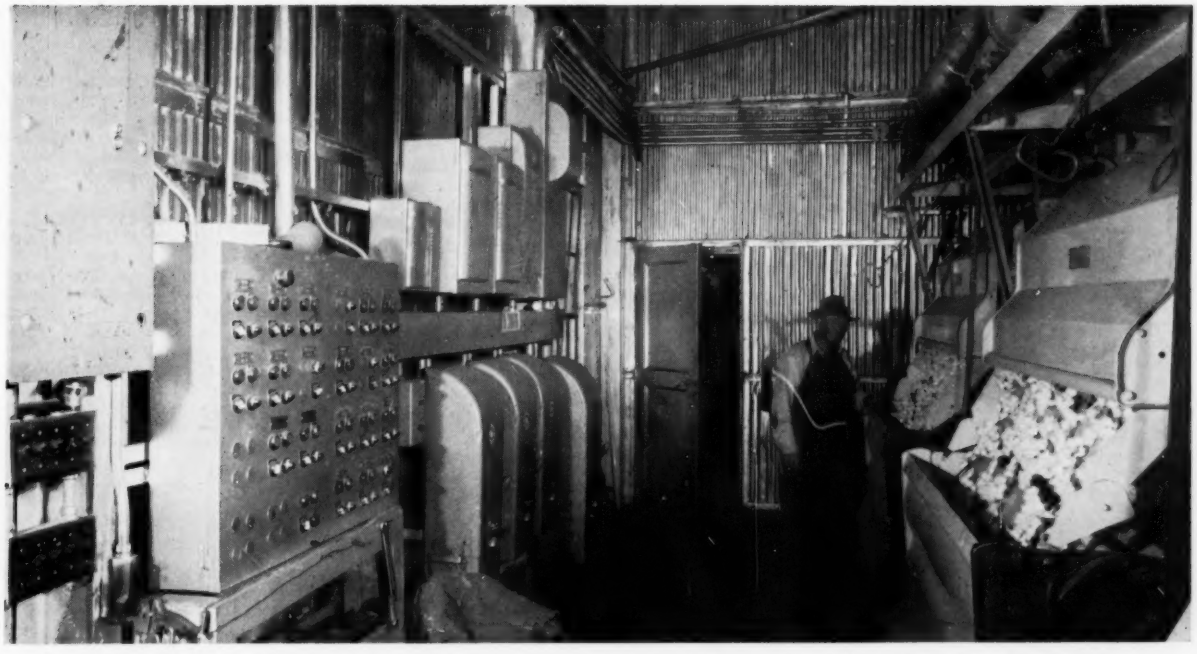
Moore joined Buckeye seven years ago as an engineering trainee.

■ **T. M. COLLEY has purchased the Gin at Edinburg, Texas, formerly owned by the Whittenburg interests.**



Machines May Aid Castor Bean Growing

TWO MACHINES, developed by Oklahoma-USDA research, that may help make castor beans more of a commercial oilseed crop in the U.S. are shown here. On the left is a mechanical harvester used last fall in Oklahoma, Texas, Arizona and California; on the right is a picture of a huller, of the same design as that mounted on the harvester, mounted as a trailer unit.



Control center for gin's electric power operation, with panelboard and motor starters.

Automatic Ginning!

Here's what Harold Sharp (at left in plaid shirt), manager of Farmers Cooperative Association Gin of New Home, Texas, has to say about the W. M. Smith Electric Company installation at his plant: **"At the present time we have been operating the plant for approximately four months and have not been stopped a single time due to motor failure. Taking into consideration that we will have no repair bill and had no downtime due to motor trouble, we have operated cheaper per bale than we did the previous year on a butane engine."**

IN THE upper picture is shown the latest type of remote control panelboard for a modern cotton gin. Each gin stand and auxiliary equipment is individually driven and all controls are centrally located in the remote panel. Through a system of interlocks and red indicator lights the operator can be sure that the gin machinery is started in the required sequence, and by one glance at the panel he can tell what equipment is operating. If, for example, a motor in the overhead fails, the red light would go off on the control panel, indicating trouble with that particular piece of equipment. Overload conditions can even be indicated by a flashing light on the control which operates that particular motor or machine.

Proof of the success of this method is the statement of Mr. Sharp (above) that he has had "no downtime due to motor failure" . . . this at a price competitive with butane engines and none of the headaches of having to locate mechanics or incur costly repair bills.

For additional information call or write

W. M. Smith Electric Company

Dallas	Fort Worth	Lubbock	Harlingen	Sulphur, La.
HAmilton 8-4606	EDison 6-2372	POrter 5-6348	GArfield 3-6587	JAckson 7-7135

• Oil Chemists Plan Houston Program

PLANS are complete for the forty-seventh annual meeting of the American Oil Chemists' Society at the Shamrock Hilton Hotel in Houston, April 23-25.

The meeting will open with the annual reports of officers and committee chairmen, which will be followed by concurrent sessions at which the technical program will be presented. Dr. J. D. Lindsay of Texas A. & M. College is program chairman.

Social events will include a buffet supper Sunday, dinner Monday at the San Jacinto Inn, golf tournament, banquet and dance Tuesday, and awards luncheon Wednesday for the Smalley honors and the golf prizes.

Hotel reservations should be made in advance, direct to Kimball Smart, Anderson, Clayton and Co., Box 2538, Houston. General chairman of the meeting is William Argue, also of Anderson, Clayton & Co.

Society officers include W. A. Peterson, Colgate-Palmolive Co., Jersey City, president; T. H. Hopper, USDA Southern Regional Research Laboratory, vice-president; A. F. Kapecki, Wurster & Sanger, Inc., Chicago, treasurer; and R. W. Bates, Armour & Co., Chicago, secretary.

Famed Ranch Broken Up

The 85,000-acre Shanghai Pierce Ranch at El Campo, Texas, is being broken up by the heirs of the man who was one of the original importers of Brahman cattle in the U.S.

Mexico May Cut Cotton Acreage 12 Percent

A 12 percent drop in Mexican cotton acreage in 1956 from the record 2,600,000 acres harvested last year is expected by USDA. Declining prices and government encouragement of wheat plantings are the chief influence in the reduction.

Most of the reduction is expected in the West Coast States of Sonora and Sinaloa, with some reduction in the Mexicali and Colima areas. The reductions were effected by means of credit restrictions to growers, particularly in marginal areas, and by control of water available for irrigation. Since credit restrictions have affected principally the marginal producers, average yields per acre in 1956 may be higher than in 1955. Barring unfavorable weather conditions, the outlook is for a crop of about two million bales, although some private estimates are as low as 1.8 million.

The 1955-56 crop is now estimated at 2,170,000 bales, increasing 22 percent over the 1954-55 crop of 1,780,000 bales. Area for the 1955-56 crop was 43 percent higher than in 1954-55.

Irrigating 100,000 Acres Of Arkansas Soybeans

Arkansas farmers in 1955 irrigated more than 100,000 acres of soybeans, an increase from only 38,000 in 1953, Dr. A. E. Spooner, associate agronomist, Arkansas Experiment Station, reports. The Station last year began a study of timing of soybean irrigation at the Rice Branch Station at Stuttgart.

In the 1955 tests, yields of both Lee and Dorman soybeans were approximately doubled by irrigating, with Lee responding more to irrigation than Dorman. The same experiment is being conducted this season at three Arkansas locations.

Naugatuck-USDA Contract For Tung Oil Research

Naugatuck Chemical Division of the U. S. Rubber Co., Naugatuck, Conn., will investigate incorporation of tung oil and tung fatty acids in polyester resins to develop new high-strength resins for various industrial uses. This contract, made through the Southern Utilization Research Branch in New Orleans, is for a period of one year. Its major objective is to develop new uses for tung oil. This contract work is part of the research program of the Southern Utilization Research Branch to improve and extend the uses of vegetable oils, USDA reports.

Textile Summer Course Offered Engineers

"Selected Topics in Textile Technology" will be the title for a two-week course offered by Massachusettes Institute of Technology, Aug. 20-31. The program will review recent advances in the application of mechanical engineering to the textile industry.

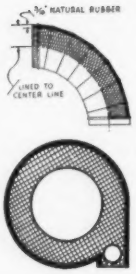
Details and application blanks may be obtained from the Summer Session Office, Massachusetts Institute of Technology, Cambridge 39.

CUT DOWNTIME WITH RUBBER

From California to Georgia ginners are turning to rubber to save hours of downtime and dollars in lost production. The new Rockhide rubber lined elbows are fast becoming standard equipment in progressive gins from one end of the cotton belt to the other. In every cotton-growing section these rubber lined elbows are saving their price in replacement cost plus thousands of dollars by drastically reducing downtime. Rockhide Elbows are made in standard sizes of 20 gauge black iron. A quarter inch of tough, abrasion resistant rubber is fused to the heel half of the elbow and guaranteed never to come off. It starts in the bead in the intake end and extends smoothly over the crimp in the discharge end, giving full protection from one end to the other. Installation is the same as any galvanized elbow.

Don't Throw Away Your Old Fan Scrolls!

Old Fan Scrolls . . . even if they have holes in them . . . can be made better than new. When lined with rubber they will outlast a new scroll many times. Write for price lists today or contact your nearest jobber.



Special angles, transitions and dust collectors also available.

Call or write one of these jobbers for immediate delivery on Rockhide Conveyor Elbows.

The Murray Company of Texas, Inc., Contact our office nearest you at Dallas, Atlanta, Memphis, or Fresno

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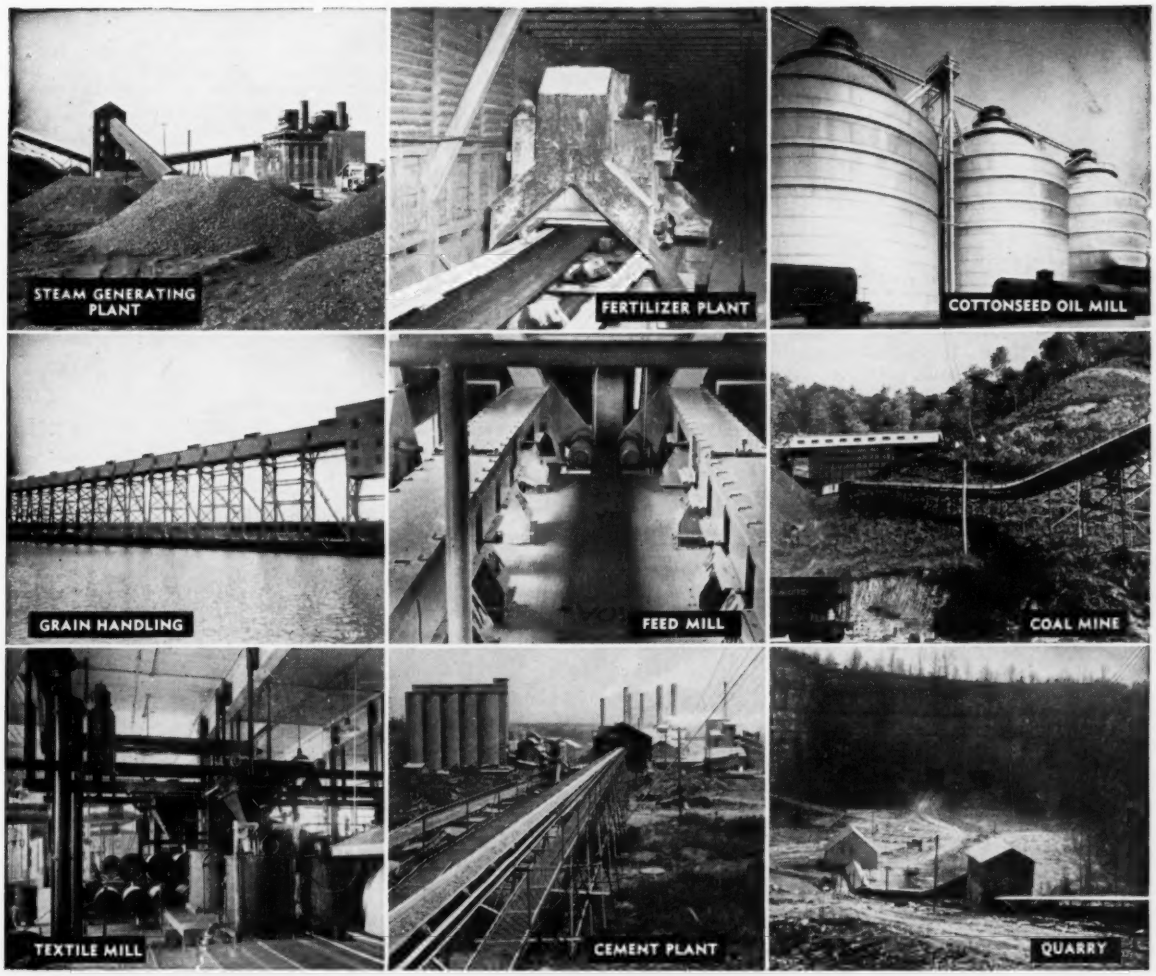

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CG&OMPRESS Photos

OFFICERS of National Cotton Ginners' Association for 1956 are shown here, as they met March 26 in Dallas. Seated are, left to right, W. J. Estes of Haralson, Ga., second vice-president who also was selected as National Ginner of the Year; and Winston Lovelace, Loving, N.M., president of the Association. Standing are Jerome Jalufka, Robstown, Texas, elected third vice-president of the National Association; Carl Trice Williams, Jackson, Tenn., re-elected secretary-treasurer; and Joe Fleming, Huntsville, Ala., first vice-president.

At Meeting in Dallas

National Ginners Elect Lovelace

■ GROUP plans expanded work for industry, names officers and hears reports on new developments in ginning.

National Cotton Ginners' Association at its annual meeting in Dallas on March 26 selected Winston Lovelace of Loving, N.M. as president, and made plans for future activities in behalf of the ginning industry and cotton as a whole.

The Association went on record as being opposed to any reduction in cotton allotments below the level for 1956, as opposing the soil bank plan and as favoring a domestic parity program for cotton.

A recommendation was made to state ginners' associations that they request state insurance regulatory bureaus to consider the new standards for use of magnets in cotton gins in the state fire insurance rates. A. Sidney Briggs, Dallas, director of the Fire Prevention and Engineering Bureau of Texas, made a report on the magnet standards, which are published elsewhere in this issue.

• **Leaders Honored**—The new president of the national ginners' group served as first vice-president during the past year and has been a leader in many industry activities. A native of Texas, Lovelace grew up in the oil milling and ginning industries, has served as an officer in New Mexico Cotton Ginners' Association for a number of years, has been a strong supporter of the National Cotton Council and is a leader in other agricultural and civic programs.

Named to serve with Lovelace were the following officers:

Joe Fleming, Huntsville, Ala., is vice-president. He is a past president of the Alabama-Florida Cotton Ginners' Association and active in other programs.

W. J. Estes of Haralson, Ga., was elected second vice-president. Estes not only has been a leader in Georgia activities, but also was selected as National Ginner of the Year by an impartial committee which met in Dallas. Details of this action appear elsewhere in this issue.

Third vice-president of the national ginning group is Jerome Jalufka of Robstown, Texas, the retiring president of Texas Cotton Ginners' Association.

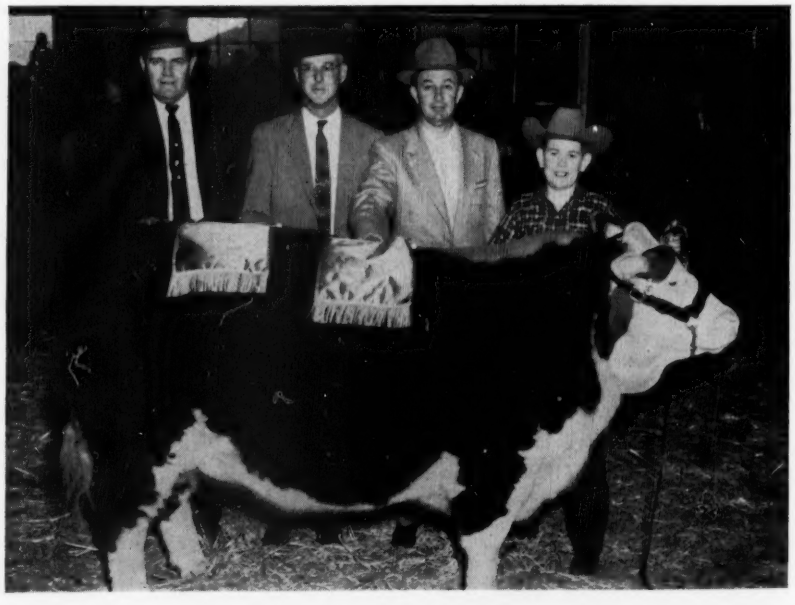
Re-elected secretary-treasurer of the National Association was Carl Trice Williams of Jackson, Tenn. Williams and his father, before him, have served the organization as secretary-treasurer since it was formed.

The group voted to place the responsibility of employing an administrative officer, and of developing the financing program, in the hands of the incoming officers and advisory committee, which is composed of past presidents and others. Clifford H. Hardy will continue to serve as executive secretary until June 1.

Retiring President S. N. Reed of O'Brien, Texas, was presented with a gift in appreciation for his services to the Association and the industry.

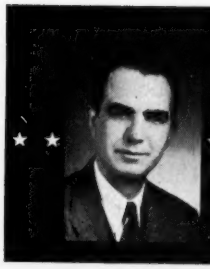
Charles A. Bennett, USDA ginning research leader, presented a report on some of the current developments in ginning investigations; and Clifford H. Hardy, executive secretary, read a report on the area of production situation.

Appreciation was expressed to R. Haughton, chairman of the board of The Cotton Gin and Oil Mill Press, official publication of the National Cotton Ginners' Association, for his cooperation.



Lubbock Mills Join in Buying Champion

OIL MILLS at Lubbock worked together to buy the grand champion steer at the South Plains Junior Fat Stock Show recently. Shown, left to right, are the representatives of the three mills—Otho Key, Plains Cooperative Oil Mill, Dixon White, Lubbock Cotton Oil Co., and Rufus Grisham, Western Cottonoil Co.— with Lyle Lewter of Lubbock, who fattened the steer. The 1,400-pound animal brought 75 cents per pound.



from our Washington Bureau

by FRED BAILEY

WASHINGTON REPRESENTATIVE

The COTTON GIN and OIL MILL PRESS

• **Ike's Fateful Decisions** — It was a little over 10 years ago that Dwight D. Eisenhower made one of the most important decisions in his life—the "D" Day invasion of France by the Allied armies.

A month ago he made another important decision—to become a candidate for re-election to the Presidency. Now, within the next few days, he must make a decision on whether to sign or veto a farm bill that is not to his liking.

It will not be an easy decision. To sign the bill would be to acknowledge probably the worst legislative defeat of his more than three years in office. A veto could be a serious blow to an already wobbly farm economy.

Washington opinion is sharply divided over whether the bill agreed upon by Senate and House conferees is a good or bad bill. The main controversy is over the level at which the government should support farm prices.

As the matter stands now, it is a high support bill. It is, by and large, the kind of a bill that most Democrats favor and most Republicans disapprove. But the division in Congress is not strictly along party lines.

Both parties are agreed upon only one thing: the urgent need for measures which would stem the decline in farm income, and reverse the trend, before loss of farm purchasing power drags the entire economy into a recession. There is agreement, too, on the need for speedy action.

But that is about as far as agreement goes. The two main points of disagreement, on the bill as a whole, are (1) whether the proposed program is in the best interest of farmers and the nation, and (2) whether it is good politics.

Secretary Benson says flatly that if the bill reaches the White House with the high price support provisions and the two-price plan for wheat and rice in it, he will strongly urge the President to veto it. The present bill, he thinks is worse than doing nothing.

President Eisenhower has given no clear-cut answer to the question of whether he would follow his Agriculture Secretary's advice. He has said, repeatedly, that he favors continuation of flexible price supports, and that he does not like the bill in its present form.

The objective of both the Republicans and the Democrats is the same—to bolster farm income this year by $1 to $2 billion. The Administration approach would be through (1) payments for not producing, and (2) government purchases of perishables to prevent ruinously low prices.

Democrats contend that more direct measures to jack up prices are needed; that the Soil Bank and other Administration measures would add little, if anything, to net farm income this year. Higher supports provided in the bill are calculated to raise cash farm income this year by close to $2 billion.

• **Cotton Is Key Factor** — Cotton legislation has been the focal point around which much of the congressional battling has taken place. It was the now famous "cotton deal" engineered by Secretary Benson that is credited with Senate defeat of the rigid support program backed by most Democrats.

Benson, according to the version subscribed to by some of his critics, offered by "buy" Southern support for the flexible support program. He offered as "payment" (1) agreement not to reduce cotton supports this year by more than three cents a pound, (2) not to reduce cotton acreage in 1957 and 1958 below the present 17.4 million acre allotment, and (3) to initiate a vigorous cotton export program at competitive world prices.

Five Cotton States Senators voted for continuation of flexibles. Some previously had favored them. Those who voted with the Administration were Anderson, Holland, Eastland, Stennis and Hayden. It was Benson's last farm bill victory.

Every vote involving cotton thereafter went against the Administration. The Senate restored the old provision permitting growers to use the old or the new parity formula, whichever would give them the higher support rate.

Next to come out of the bill was a provision that would have changed the base for computing cotton supports. The Senate retained the old 7/8-inch Middling instead of the Administration-sponsored average staple length and grade of the crop. It included the prohibition against reducing cotton acreage allotments in 1957 and 1958, plus 100,000 acres each year for small farmers.

The limitation on support loans to $100,000 for any one grower, favored by the President, was removed from the bill, with the backing of Southern Senators. Next, the President was directed to negotiate with textile manufacturing countries for a limit on exports to this country.

The final defeat came when the Senate-House conferees voted to restore mandatory 90 percent of support for cotton and other basic crops for 1956.

• **Hasn't Surrendered**—Despite the succession of defeats, both in the Senate and in the conference meetings, the Administration has not given up the battle. The conference report must go to both the Senate and the House floors for approval or disapproval. That requires a majority vote.

Administration forces are being mustered in an all-out effort to change the bill only on two major provisions. First, to knock out the 90 percent mandatory price support provision. Second, to restore the modernized parity formula to full and exclusive effectiveness.

Secretary Benson would like several other changes. He is strongly opposed to the Domestic Parity plan for wheat and rice. He would like to change the support base for cotton to the crop average, and he would prefer a limit on loans to any one grower.

The issue now has become not so much the level of supports, as one of face-saving. The Administration forces badly need to restore flexible supports in order to make the bill palatable to the President. Democrats want a victory as a campaign issue.

Opinion is divided on whether the President would sign the bill as approved by the conference committee. The "down-town" opinion is that he would veto it, but on the Hill most congressmen think he would sign rather than risk no legislation and a possible further decline in farm income.

• More Cotton Used, Less Per Capita

COTTON consumption per capita increased in 1955 over the previous year for the first time since 1951, but cotton continued to lose out to synthetics in the race for markets, USDA reports. Last year, cotton accounted for only 66 percent of the total consumption of fibers, as compared with 68.8 percent in 1954.

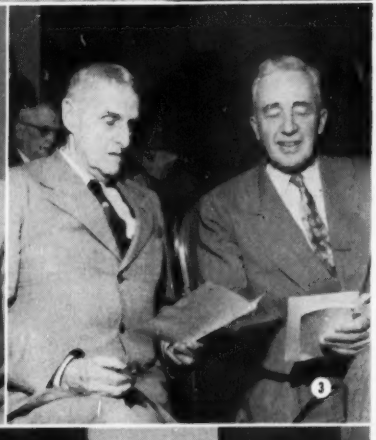
Each person in the U.S. is estimated to have used 26.5 pounds of cotton last year, 1.1 pounds more than in 1954. While this was about four percent increase, the per capita consumption of synthetics rose 23 percent to a new record high.

The following table shows cotton consumption—total pounds, percentage of all fiber consumed and pounds per capita—since 1930—in revised figures issued by USDA:

Calender year	Cotton		
	Total	Percentage of fibers	Per capita
	Mil. lb.	Pct.	Lb.
1930	2,616.6	84.5	21.3
1931	2,654.9	82.5	21.4
1932	2,463.7	84.0	19.7
1933	3,050.7	83.2	24.3
1934	2,659.5	84.2	21.0
1935	2,755.4	78.3	21.7
1936	3,471.4	81.1	27.1
1937	3,646.6	82.7	28.3
1938	2,918.3	81.2	22.5
1939	3,628.6	79.7	27.7
1940	3,959.1	80.6	30.0
1941	5,192.1	80.1	38.9
1942	5,633.1	81.7	41.8
1943	5,270.6	79.7	38.6
1944	4,790.4	77.6	34.6
1945	4,515.8	75.4	32.3
1946	4,809.1	74.0	34.0
1947	4,665.6	72.7	32.4
1948	4,463.5	69.8	30.4
1949	3,839.1	70.6	25.7
1950	4,682.7	68.5	30.9
1951	4,868.6	71.1	31.5
1952	4,470.9	69.6	28.5
1953	4,456.1	69.0	27.9
1954	4,127.3	68.8	25.4
1955	4,384.3	65.7	26.5

McRae Stresses Quality

Herschel McRae, National Cotton Council, Memphis, stressed the importance of maintaining and improving the quality of cotton in a recent talk before Arizona cotton growers and ginners at Phoenix. Dr. E. H. Pressley, University of Arizona; Dr. Lester Blank, USDA, and other leaders spoke at the meeting.



CG&OMPress Photo.

REPRESENTATIVE SCENES at the Texas Cotton Ginners' Association convention are shown here. Officers of the Association, in Photo No. 1, are, left to right: Roy Forkner, Lubbock, vice-president; Horace Etchison, McAllen, president and Texas Ginner of the Year; Jerome Jalufka, Robstown, retiring president; and Ed H. Bush, Dallas, re-appointed secretary-treasurer. Photo No. 2 shows Sam Reed, O'Brien, Texas, retiring president of National Cotton Ginners' Association, chatting with Garner M. Lester, Jackson, Miss., past president of the National and Mississippi ginners' organizations and 1955 Mississippi Ginner of the Year. Charles A. Bennett, Stoneville, Miss., and W. M. Hurst, Washington, two USDA leaders in research, are shown in Photo 3. Oklahomans are shown in No. 4—J. D. Fleming, secretary of the state's ginners' and crushers' associations; Sam LaFaver, Watonga, president of Oklahoma Ginners' Association; and A. E. Goerke, also of Watonga, a past president.

Named at Annual Meeting

Etchison President Of Texas Ginners

■ RECORD CROWDS attend Dallas convention. Forkner elected vice-president; changes made in by-laws of association.

Approximately 6,000 members of Texas Cotton Ginners' Association, their families and guests attended the forty-third annual convention, March 26-28, at which Horace Etchison of McAllen was elected president and a number of significant changes were made in the by-laws. The convention sessions and exhibits were at the State Fair of Texas in Dallas.

Addresses by cotton and public affairs leaders and many entertainment features were among the attractions which helped to increase the attendance to the highest figure in many years, if not a record, according to Martin Teinert of Walburg, convention committee chairman. A count showed 5,783 persons registered, and some who attended were missed in the rush of registering.

• **New Officers** — Association directors selected the man who has been chairman of the executive committee during the past year to be president during 1956; and Etchison received two other honors during the meeting. He was presented with the trophy for 1955 Texas Ginner of the Year, selected by an impartial committee; and received the Swift & Co. Founders' Centennial Award, which is being presented to only two persons in Texas.

Named to serve as vice-president with Etchison was Roy Forkner of Lubbock, another leader in the ginning industry who was selected as the state's Ginner of the Year in 1954.

Ed H. Bush, executive vice-president, was reappointed to his position and praised for outstanding service to the Association.

The president appointed the following executive committee: R. L. Horton, Abilene; C. L. Walker, Jr., Temple; James Walsh, Mission; Senator Crawford Martin, Hillsboro; Peary Wilemon, Maypearl; Wilmer Smith, New Home; Martin Teinert, Walburg; and R. L. Massey, Pilot Point.

Retiring President Jerome Jalufka of Robstown was presented with a gift of appreciation for his two years of leadership and received many tributes for his accomplishments in strengthening the Association.

• **By-Laws Changed** — A number of changes were made in the Association's by-laws at the final business session on Wednesday morning, all representing recommendations that had been made by the board of directors. In a number of cases these were made to clarify matters that had not been clear in the previous by-laws, last changed in 1949; and some were made to meet changed conditions since then.

Presidents of the Association will, under the new by-laws, serve only one term and will not be eligible to succeed themselves.

Another change provides for mem-

It's Dallas, April 1-3 For 1957 Meeting

Following the highly successful convention of 1956, officials of Texas Cotton Ginners' Association have announced that the 1957 meeting will be held April 1-3 in Dallas, centered at the State Fair of Texas, as in the past.

bers to be dropped from membership for non-payment of dues.

The process for naming directors was clarified by a provision that each district shall elect one director and one alternate. No proxy voting is permitted at board meetings, and the alternate may vote only in the absence of his director. (This was done to assure equal representation from districts and to prevent any district from having more than one vote).

The executive committee will consist of not more than 11 members: the president, vice-president and retiring president; five members appointed from the board of directors; and three from the general membership, if so desired by the president. Executive committee actions are subject to approval of the board.

Past presidents who continue to be actitve in the ginning industry will be honorary advisory members of the board of directors, with all of the rights and privileges of regular board members.

Roberts Rules of Order will prevail at meetings when other rules are not applicable.

• **Exhibits** — Exhibits of gin machinery and supplies and booths of oil mills and other firms serving ginners filled the 50,000 square feet of the Agriculture Building and overflowed on the grounds in front of the building.

Ginners commented that the variety and scope of the exhibits were of much value to them, while representatives of the exhibiting firms expressed pleasure at the number and interest of ginners who visited their displays.

• **Entertainment**—Members of the Gin Machinery and Supply Association, Inc., hosts for the convention, arranged the details of the exhibits and provided many different entertainment features that were well attended by ginners and their families.

In addition to entertainment at the beginning of each business session, features provided included:

Ladies were taken on Monday afternoon on a tour and reception at the home office and plant of the Dr. Pepper Co.

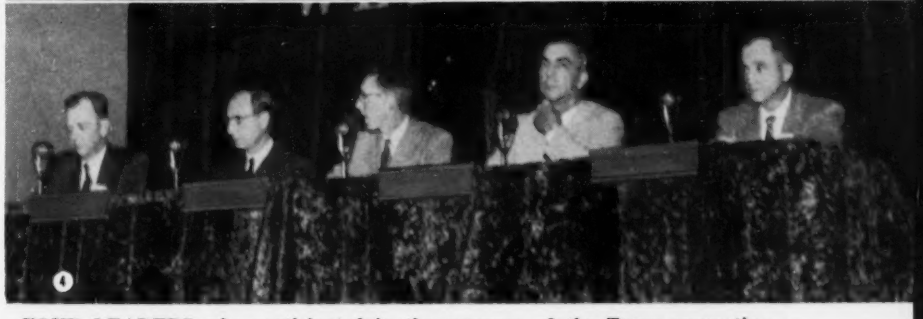
A dance Monday evening attracted a crowd of 2,000 that filled the large Main Ballroom of the new Statler Hilton Hotel.

Arthur A. Everts Co., jewelists, were hosts Tuesday morning at an open house for the ladies.

Volk Bros. Co. presented a style show of cottons for women and girls, and Jas. K. Wilson Co. a showing of cotton for men and boys that attracted a large crowd to the convention hall on Tuesday afternoon. Mrs. Elizabeth Peabody served ably as commentator for both of the shows.

Joan Frank Productions, with per-

(Continued on Page 46)



FOUR LEADERS who participated in the program of the Texas convention are shown in Photo No. 1. Left to right are Roy Forkner, Lubbock, elected vice-president; F. Marion Rhodes, Washington, one of the principal speakers; W. J. Estes, Haralson, Ga., presented with the National Ginner of the Year award; and Ed H. Bush, Dallas, re-appointed executive vice-president of the Texas Association. Photo 2 shows Keynote Speaker Burris C. Jackson of Hillsboro, chairman, Statewide Cotton Committee of Texas. President Horace Etchison is shown in Photo 3 receiving the Texas Ginner of the Year award from Winston Lovelace, Loving N.M., president of the National Association. Participants in the panel discussion at the initial session are shown in No. 4. They are Vernon Moore, USDA Ginning Laboratory, Stoneville, Miss.; Otto Goedecke, cotton merchant, Hallettsville, Texas; A. M. Pendleton, USDA agricultural engineer, Dallas; C. M. Merkel, USDA Ginning Laboratory, Stoneville, Miss.; and Ernest Carpenter, representing mills, Greenwood, S.C.

Remember This?

They Honored a Memphis Leader . . .

FRIENDS of E. E. (Ned) Clark are shown here as they gathered in Memphis to honor him as he retired after many years of service to the cotton oil industry and to his firm, Southern Cotton Oil Co. Most readers of the Midsouth area will be able to spot many familiar faces in this picture.

• Californian Makes "Cotton Saver"

A "COTTON SAVER" machine that is designed to pick up cotton lost in the field has been developed by Oda Benton of Hanford, Calif.

He says that the machine will follow behind mechanical pickers, cut the stalks, pick up the seed cotton that was missed at the first picking, and leave the stalks to be plowed back into the soil.

The lint will be drawn off into a storage compartment at the top of the machine by a vacuum system. The cotton bin will be dumped by gravity action, Benton said, eliminating the need for expensive hydraulic equipment.

"My present design," Benton said, "calls for the machine to be pulled behind an ordinary tractor with a power takeoff." He estimated a two-row machine could be built to sell at from $1,000 to $1,200 and would be able to clean from 40 to 50 acres in a 12 hour period.

Outstanding Club Woman Is Cotton Leader's Wife

Mrs. R. B. McQuatters Sr., Littlefield, Texas, has been selected as the Outstanding Club Woman of the Seventh District of the Texas Federation of Women's Clubs. Her husband is president of the Littlefield Farmers' Co-op Gin, vice-president of Plains Co-op Oil Mill, president of Farmers' Co-op Compress, and active in the National Cotton Council.

Mrs. McQuatters' activities, which won her the award, included aiding in the preparation and planning of the first Lamb County Cotton Festival last year, and directing 40 models in a cotton style show at Lubbock last July.

Crump Heads Bag Firm

Joseph D. Crump has been elected president of Semmes Bag Co., succeeding Thomas J. Semmes, who died March 6. Crump was a co-founder of the firm.

Million Ladybugs Working

More than a million ladybugs have been released in the L. L. Scott farm near Plainview, Texas, in an effort to control greenbugs in 100 acres of wheat.

Nonshattering Sesame Harvest Demonstrated

THE NEW RIO SESAME, developed in the cooperative research program of federal, state and private institutions aided by National Cottonseed Products Association, is being examined here. The group is at Texas A. & M. to see a new way of harvesting the nonshattering oilseed, which is shown in the shock just before being put through the thresher in the background. From left to right are J. C. Hoggard of the Texas Prison System; Edwin Krause of Bartlett; Ed Stapleton of Balmorhea, and his son, Don Stapleton; Harvey Kramer of Bartlett; Al Novosad of the Experiment Station; Murray L. Kinman, USDA, who handles work in sesame at Texas A. & M. and James Stafford of the Frito Co. experimental farm near Midlothian.

• Cotton Boot Straps Lift Young Farmer

CLAUDE HUGHES, Arizona, Outstanding Farmer of 1955, started farming in 1944 with $2,000, one old tractor, a cultivator and a borrowed planter. He came "Up By His Cotton Boot Straps," says an article in a recent issue of Arizona Farmer-Stockman. His story includes the following achievements:

In 1944, Claude had a tractor and cultivator with which he did custom work. He and Mrs. Hughes had saved $2,000. He was able to talk a local owner into a crop-rent contract on a piece of land which was far from the best in the county and, in fact, had been pretty much abused. He borrowed a planter, somehow managed to get a crop in, then strugg'ed to get the crop raised and picked. And he cleared $6,000.

The next year, on another place, they lost it.

The second Hughes season was not profitable, largely because of insect damage and lack of soil fertility. But he did better, much better, in 1946. Enough that he was able to pay the initial installment on the 320 acres that has been the Hughes "home place" from then to now. Because of Johnson grass and a lot of other things wrong with it, the total price was $23,000, a mere $75 an acre. That included one pretty good well which has since been deepened and equipped with a bigger motor.

By 1955, and probably a long time before, he owned that place free and clear. The Johnson grass was gone and the half-section had become one of the neatest, most productive farms in all Pinal County. Among many improvements added was a spacious, modern home for Mr. and Mrs. Hughes and their three children. He owned a cotton harvester and all the other equipment he could use, without a dollar of indebtedness standing against any of it.

Delta Council Meeting Will Honor Wearers of Cotton

Mississippi Delta Council will hold its annual meeting May 8 at Cleveland, Miss., with David Rockefeller, business leader, and Congressman Harold D. Cooley of North Carolina as the principal speakers.

Men and women wearing outstanding cotton fashions to be meeting will receive recognition from the women's committee which also is planning wide observance of National Cotton Week, May 14-19.

Mrs. W. T. Wynn of Greenville is general chairman of the women's committee; and chairmen of the five subcommittees are: Mrs. William Douglas Hemphill of Indianola, publicity; Miss Olive Dowell of Stoneville, Women's Club; Mrs. B. R. Carpenter of Cleveland, annual meeting; Mrs. Walton W. Gresham of Indianola; school activity; Mrs. Mat Steele of Morgan City, National Cotton Week.

Warning on "Flue Bran"

"Flue bran" is being sold in Arkansas by peddlers who misrepresent the product as peat moss, soil conditioner or other types of fertilizer for which it has little value, says Arkansas State Plant Board.

• Cotton Saved by Strip-Cropping

STRIP-CROPPING protected cotton from erosion on Kinnebrew Farms in the Lower Rio Grande Valley of Texas recently when hundreds of acres on adjoining farms were severely damaged by high winds.

L. L. Kinnebrew said he took out insurance against blowing sand when he strip-cropped 400 acres in 1952, with technical assistance furnished by the Soil Conservation Service. He planted two rows of blue panicum grass every 20 rows to allow for one fallow row on each side of the strip and 16 rows of crop. Field borders were set to elephant grass.

In spite of very low moisture conditions, Kinnebrew produced just under half a bale of cotton to the acre last year and approximately a bale two years ago. He gives the wind strips credit for saving his profits, most of it, under adverse conditions of drouth and reduced cotton acreage. And, they also helped his neighbors. He observed that the strips on his high sandy ridges and hills kept sand in place that otherwise would have been carried over a wide area.

Lubbock County Gin Sold

Purchase from T. C. Dempsey of a gin in Lubbock County has been announced by a group which includes Ford Bell, J. P. Clark, manager, Gaylord Kinard, W. T. Lemons, Gene Evans, Ed Foreman, W. F. Raymond, Egar Ehler, D. C. Hlavaty, and Velvin Stanton.

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Texas Ginners

(Continued from Page 42)

sonal supervision of Dick Leonard, presented the major entertainment feature, the two-hour variety show, "King Cotton's Spectacular of 1956," which was enthusiastically received by the capacity audience in the State Fair Auditorium on Tuesday evening.

Ladies attending also enjoyed bingo on Wednesday morning, and many guests received attendance prizes at the various business sessions.

Officers and members of the executive committee of the gin machinery group, all of Dallas, are R. Haughton, The Cotton Gin and Oil Mill Press, president; D. D. Day, The Murray Co. of Texas, vice-president; A. G. Falk, Magnolia Petroleum Co., secretary; L. A. Mindrup, The Stacy Co., treasurer; and H. R. Carlson, International Harvester Co.; U. H. Ohrman, Texas Power & Light Co. and E. J. Pflanz, Briggs-Weaver Machinery Co.

• **First Business Session** — Ginners heard a spirited address in behalf of cotton at the initial business session, following a welcome address by J. Ben Critz, vice-president and general manager of the Dallas Chamber of Commerce; and the response by Peary Wilemon of Maypearl.

Cotton is fighting for its existence in Texas, and those who fight for the crop that has brought Texas an average of $800 million yearly are fighting for the economic well-being of the whole state, Keynote Speaker Burris C. Jackson told the convention. Jackson is chairman of the Statewide Cotton Committee of Texas, a director of the National Cotton Council and active in many other industry programs.

"Those of us who produce, process and merchandise Texas cotton have a heritage to make anyone proud," Jackson continued. "We must be leaders in our communities in the battle to preserve that heritage and that crop."

The cotton man from Hillsboro outlined the work of the cotton and cottonseed improvement committee of the Statewide Cotton Committee, and pointed out the many opportunities for making Texas cotton and seed better suited to market needs, more competitive and more profitable to produce.

Practical information on mechanical harvesting and ginning was developed in a panel discussion and question period at the initial business session.

A. M. Pendleton, USDA Extension agricultural engineer with headquarters in Dallas, was moderator for the panel.

"Machines and Practices for Ginning Machine-Picked Cottons" were summarized by Charles M. Merkel, engineer in charge, USDA Cotton Ginning Laboratory, Stoneville, Miss. "Sell your producers," Merkel urged the ginners, "on the idea of helping you by picking or stripping according to recommended practices. Equip your gin adequately but not excessively, and operate your machinery efficiently to suit the cotton being handled.

"Group the cotton to effectively utilize the equipment and to handle the cotton as little as possible to produce the highest bale value, which may not always be the highest grade."

Vernon Moore, fiber technologist with the Laboratory, outlined methods through which ginners can maintain fiber quality.

Otto Goedecke, cotton merchant from Hallettsville, Texas, emphasized the importance of proper merchandising of cotton of the quality desired by mills.

Ginners and merchants, he commented, are service organizations very essential to the growing and manufacturing of cotton; and the preservation of quality is an indispensable function of the ginner.

Ernest Carpenter, Greenwood Mills, Greenwood, S.C., discussed mechanically harvested cotton from the standpoint of mills. He praised cotton as a superior fiber, but emphasized that it must compete with syntehtics and foreign growths both as to quality and as to price for mills to be able to use it.

• **Second Day's Sessions** — "Cotton Can Compete If We Let It," was the title of the featured address at the Tuesday morning session, made by F. Marion Rhodes, director of USDA's Cotton Division in Washington.

After reviewing the supply and competitive situation, the USDA representative congratulated ginners for their handling of machine-picked cotton. He concluded by saying "We must find ways to eliminate the needs for continuing acreage cuts. A first step should be coordinated efforts to regain and hold the maximum practical markets for cotton—both at home and abroad."

Texas Ginner of the Year Horace Etchison received his award at this session, as did National Ginner of the Year W. J. Estes of Haralson, Ga. (Details of the selection and the presentation of the national award, and of the meeting of the National Cotton Ginners' Association appear elsewhere in this issue.)

Attorney General John Ben Shepperd of Texas was the final guest speaker on the convention program.

He cited some of the things in Texas governmental and law enforcement conditions that require improving and urged all good citizens to take an active part in remedying the situation.

Texans also were urged by the Attorney General to fight against federal encroachment under which, he said, "Texas is slowly being driven into a corner.

"If this continues, we face the destruction of our revenues, our local autonomy, and our right to make laws which fit our own citizens, communities and sacred traditions."

He said that other states face the same problem and that an aroused citizenry can restore to the states their rights under a constitutional government.

• **Final Session** — Changes in by-laws approved at the final business session were outlined earlier in this article.

Ginners at this session also heard expressions of appreciation from their new officers and from the retiring president, Jerome Jalufka.

Charlie Chapman of Texas Department of Agriculture also officially notified them that sterilization of cottonseed for pink bollworm control has been ended and will not be resumed in Texas. Cottonseed from other states may move into Texas without sterilization and it is expected that Texas seed will be permitted to move into some, if not all, of the states that have the pink bollworm without sterilization. Sterilization probably will be required as in the past for all seed moving to pink-bollworm-free areas. (See additional information elsewhere in this issue.)

It was announced that next January's meeting of the board of directors and representatives of allied industries will be held in McAllen, at a date to be announced later, and that members are invited.

The convention adjourned at noon.

5,783 Folks . . . and One Dog . . . Attended

TEXAS GINNERS set a record in attendance at their 1956 convention, with more than 5,783 persons actually counted, and they didn't even count this four-legged registrant. The picture shows R. E. Swingle of Beltraction Co. registering his dog, "Shorty", with the help of Mrs. Aline Bateman of the ginners' organization.

Mother of Mrs. Pendleton Buried in Farmersville

Funeral services for Mrs. Arthur F. Yeager of Denton, Texas, were held March 31 at the First Baptist Church in Farmersville. She was the mother of Mrs. Alfred M. Pendleton of Dallas, whose friends throughout the cotton industry will extend sympathy to her and her family in their loss.

Percale Sheeting Aids McKinley Expedition

Fine percale sheets aren't exactly what one would expect to find in the snowy mass of North America's highest peak. But this soft sheeting put in six weks of rugged service atop Mount McKinley, 20,300 feet high. It wasn't used as bedding, but as a shield from the glaring sun.

The director of Boston's Museum of Science, Bradford Washburn, took the sheeting with him on his latest Alaskan surveying trip. He used it to keep the bright sun off surveying instruments (the glare interferes with accurate readings). The sheets also helped preserve frozen food supplies.

The temperatures alone—20 to 30 degrees below zero at night and "warming up" to ten degrees above zero on "hot" days—were low enough to keep frozen foods intact. But the sun, attracted by the dark coloring on the labels, would spoil the food.

On previous trips, Washburn tried tarpaulins and nylon cloth to keep the sun off. The tarps were heavy, a handicap where everything had to be be flown in or packed on someone's back. Nylon proved too slippery and hard to handle. But the percale sheeting worked fine. It draped well over the piles of food, stood up under the rough handling and heavy winds, and was light enough to be thoroughly practical.

The next time he ventures up Mount McKinley, Washburn will take some orange-dyed sheeting, as well as bleached percale. The orange fabric will be used to mark spots where he wants planes to drop supplies.

Glidden Building Feeder Elevators for Chicago

Construction of two 200,000-bushel feeder elevators, one in Lockport, Ill., and one in Seneca, to supply grain to the Glidden Co. 6,500,000-bushel terminal elevator in Chicago has been announced by Willard C. Lighter, Glidden vice-president and general manager of the firm's chemurgy division.

Erected at a cost of $200,000 each, the new Glidden elevators are scheduled to be in operation by the middle of September. They will receive soybeans, corn, wheat and oats by truck from dealers in surrounding areas and distribute these products via Illinois River barges to Glidden's grain terminal on the Calumet River in Chicago or to southerly locations. The concern operates 39 major producing units throughout the U.S. and Canada, and its annual sales exceed $200 million.

COTTONS BRED BY COKER

COKER 124

A New, High Yielding, High Gin Turnout Variety for the Mississippi Valley

In the 3-year average of Advance Strains tests conducted in 1953, 1954 and 1955 by the Delta Branch Experiment Station at Stoneville, Miss., Coker 124 led the principal varieties grown in the Delta by a substantial margin in yield, lint and money value per acre.

COKER 100 WILT

An Old Reliable Wilt Resistant Variety for the South

The outstanding performance of Coker 100 Wilt is well known from the Mississippi Valley to the Carolinas. Its high yields, premium staple, high wilt resistance, ease of picking, earliness and storm resistance have made it an ideal variety for both wilt and non-wilt soils.

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Oil Mill Equipment for Sale

OIL MILL EQUIPMENT FOR SALE—Rebuilt twin motor Anderson high speed expellers, French screw presses, stack cookers, meal coolers, fourteen inch conditioners, filter presses, oil screening tanks, complete modern prepressing or single press expeller mills.—Pittock & Associates, Glen Riddle, Pa.

FOR SALE — Filter presses; screening tanks; single and twin motor Anderson Super Duo expellers, with conditioners; several extra 36" cooker dryers and conditioners. All steel linter baling presses; 141-176 saw linters; seed cleaners; No. 153 separating units; bar hullers; lint beaters; stack cookers; rolls; hydraulic press room equipment.—V. A. Lessor & Co., P. O. Box 108, Fort Worth, Texas.

FOR SALE—200 feet 16" plain conveyors, 36 feet 16" cut flight conveyors, 30 feet 9" cut flight conveyors, 60 feet 4" plain conveyors. One 30 and one 40 h.p. 2200 volt electric motors. One coupling type clutch 35 h.p. 2-7/16 bore, cast iron elevator boots, steel splint pulleys, shafts and plain bearings.—Brady Cotton Oil Company, Paul Klatt, secretary, Phone 2218, Brady, Texas.

FOR SALE—Anderson Super Duo expellers, each complete with 14" conditioner and 36" cooker; 5 high 60" ball bearing rolls.141-saw Carver linters. Fort Worth Lint Cleaner. 72" and 85" cookers. Butters milling machine. Double box linter press. Attrition mills. Single drum hull beater. 48" Carver huller.—Sproles & Cook Machinery Co., 151 Leslie St., Telephone PR-5958, Dallas, Texas.

FOR SALE—For French press: One new feed worm and one new star wheel.—Glenn Wright, Box 230, Morrilton, Arkansas.

FOR SALE—Multiple head linter saw filing machines 106 or 141 saw linters. Excellent for seed delinting plants.—Creasy Rotary Filer Co., Ballinger, Texas.

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200	Sq. Cage	900		1481
150	Sq. Cage	900		1188
100	Slipring	1200		1076
100	Slipring	900		1189
100	Sq. Cage	1200		758
100	Sq. Cage	900		879
75	Sq. Cage	1800		490
75	Slipring	1200		889
75	Slipring	900		991
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All Sizes and Types Motors Up to 800 H.P. in Stock. LOAN MOTORS AVAILABLE AT NO CHARGE.

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FOR SALE—Anderson Twin Motor Super-Duo 36" cooker expellers complete with motors and electrical starting equipment. Purchased new in 1947, operated approximately 2½ years. A-1 condition. Present arrangement for flax and soybeans. Contact Lee Atherton by letter or phone, Federal 3-2112, Archer-Daniels-Midland Company, Minneapolis, Minnesota.

Gin Equipment for Sale

FOR SALE—Cotton gins, oil mills, compresses. Contact M. M. Phillips, Phone TE5-8555, P. O. Box 1288, Corpus Christi, Texas.

FOR SALE — Conveyor distributors. One 5-80 Mitchell, one 5-70 Lummus. Gins: 4-90 Murray Safety, 10-90 Gullett, 7-80 Lummus 1949 model, glass front double mote, 4-80 Continental Model C brush, 4-80 1952 Model glass front with mote suction, 4-80 Cen-Tennial air blast with loose roll boxes and glass fronts, 5-70 Continental Model C brush with 30 fronts, 5-70 Lummus automatic all-steel ball-bearing picker rollers. Driers: Two Lummus thermo cleaners. Bur machines: 1-14' Murray, 1-10' all-steel Continental, one Hardwicke-Etter 14' wood. Cleaners: One Murray 52" V-belt inclined blow-in type, two Continental inclined 4-cylinder all-steel, one 6-cylinder Continental all-steel air line, 5-60" V-drive Super Mitchell, 5-66" Hardwicke-Etter with 4-cylinder after-cleaner. Huller cleaner feeders: 4-80 Lummus LEF, factory reconditioned, like new, make me offer. 5-70 Lummus MEF, 7-80 Lummus MEF, one Continental 4-X 80-saw. Condensers: Two 60" Continental all-steel side-discharge, one Lummus 60" up-discharge. Separators: One Murray, one Gullett, one Continental, one Lummus. Pumps: One Murray, one Continental, one Hardwicke-Etter. Engines: One L3000 Le Roi, one MM Twin six 210 h.p., one MM 240 h.p. 6-cylinder. Electric motors: Sizes from 3 to 150 h.p., 220-440 volt.—Bill Smith, Box 694, Phones 49626 and 47847, Abilene, Texas.

FOR SALE—Cotton gins: 4-90 Murray gins, GM diesel, all-steel, Moss lint cleaner, nice home, houses for labor, $120,000. 5-90 Cen-Tennial, electric, steel, big irrigation, $125,000. 5-80 Continental gins, electric, plenty irrigation, $85,000, $25,000 cash. 4-80 Continental F3 gins, electric, irrigated, $45,000, $20,000 cash.—W. T. Raybon, Box 41, Lubbock, Texas. Phone PO2-1605.

FOR SALE—All-steel Lummus 60" condenser, up-discharge. Excellent condition.—R. D. Southard Gin, Rt. 3, Box 32, Robstown, Texas.

FOR SALE—Three Cen-Tennial all-steel gins, modern and in good condition, together with steel condenser, lint flue and separator, all located at LaGrange, Georgia. Contact E. W. Buffington, Vice President, Farmers Cooperative Gin and Whse. Company, Boaz, Alabama.

FOR SALE—4-67" Hardwicke-Etter feeders, double V-belt, late models.—Jim Kilgore, Muskogee, Oklahoma.

FOR SALE—3-80 Gullett all-steel airblast gin outfit, including 14 shelf drier, bur machine, four and six drum inclined cleaners, down-packing steel press, super extractors, scales, motors, fans. Completely modern, ready to gin now. Priced to sell.—Wakelon Trading Company, P. O. Box 486, Phone 4411, Zebulon, N.C.

FOR SALE—Gin to be moved. 4-80 Continental brush, electric. Complete buildings and all. Bargain.—P. O. Box 242, Denton, Texas.

FOR SALE—One Murray Big Reel cleaner drier with separator, double 35" fan, Mitchell burner, 1948 Model, condition good. Priced to sell at $3,750 loaded on buyers truck.—M. S. Knowlton, Perthshire, Mississippi.

FOR SALE—4-80 Murray outfit to be moved. Steel building, power, cotton house, seed house, office and scales.—Farmers Coop Gin, Royce City, Texas.

FOR SALE—2-80 Continental brush direct connected gins. 2-66 Super Mitchell extractor feeders flat belts. Used seed sterilizers.—Service Gin Co., P. O. Box 21, Phone 4251, Ville Platte, Louisiana.

FOR SALE—Complete. 6-70 air blast loose roll huller gins, with MEF abstractor feeders, practically new with V-belt drive, lint flue with trunk. —Ed. Kolar, Moulton, Texas.

FOR SALE—Special bargain—10-90 saw, practically new, Gullett DC-AB gins at $475 each.—Bill Smith, P. O. Box 694, Phones 49626 and 47847, Abilene, Texas.

FOR SALE—Continental gin equipment — two years old and in good condition: 5-80 saw air blast Model F3, Auto and R.D.I. A/C drive gins with 30 fronts, 700 r.p.m. 5-80 saw seed hoppers. 5-80 saw Model E, Four X HC feeders with after cleaner and Continental conveyor. One 5-80 saw 72" right hand model condenser with hood. One left hand Paragon type AX, DP all-metal press with 8⅝" ram. One left hand EJ mechanical tramper with positive feed mechanism. One suction elevator with 50" MGR cleaner separator. One 14" conveyor distributor with change-blade hoppers and wing type overflow shield. Two track type wagon telescopes. One Hardwicke-Etter big bur separator. Note: plus $3,000 of miscellaneous gin parts.—Write S. & F. Cotton Co., P. O. Box 1502, Bakersfield, Calif. for further information.

FOR SALE—One new Cen-Tennial centrifugal lint cleaner at a tremendous bargain.—Contact Howard Hall Company, 214 South 10th Street, Birmingham, Alabama.

FOR SALE—4-80 Continental all-steel gin with steel building. Five labor houses, large seed house, and 4000 square feet of Mexican barracks. Also new brick residence. Priced to sell.—Kevil Coffman, RFD. 5, Tahoka, Texas.

FOR SALE—Three Hardwicke-Etter cleaner feeders, and two Gullett 66" feeders.—Glenn Wright, Box 230, Morrilton, Arkansas.

FOR SALE—Government type tower driers, automatic gas heaters, blow pipes, and fittings. We are prepared to deliver and install driers, and any gin machinery in conjunction with drying equipment.—Service Gin Co., P. O. Box 21, Phone 4251, Ville Platte, Louisiana.

FOR SALE—To be moved. One complete late-model, all-steel 4-80 gin, consisting of 4-80 glass front Murray gins. 4-80 special standard V-drive Mitchells. 4-80 submerged lint flue. 4-80 Hardwicke-Etter conveyor distributor. One 6-cylinder Hardwicke-Etter airline cleaner. One 16-shelf Hardwicke-Etter tower drier, fan and burner. One 5-cylinder Hardwicke-Etter V-drive blow-in No. 1 cleaner. One Hardwicke-Etter 3-way bypass. One 14' Hardwicke-Etter bur machine. One 5-cylinder V-drive No. 2 cleaner. One Hardwicke-Etter side discharge condenser. One Cameron ballbearing tramper. One Hardwicke-Etter up-packing press. One set Hardwicke-Etter seed scales. Two rotor lifts. One MM butane or natural gas engine. Fans on V-drive, all transmissions, etc. This is an extra good, clean gin at a bargain.—Bill Smith,Box 694, Phones 49626 and 47847, Abilene, Texas

FOR SALE—To be moved, one complete Gullett gin, 4-80 saw 1949 Gullett gins, four Model 100 Gullett feeders, one 1949 Gullett dropper, one 1949 Gullett condenser and lint flue, one 1949 all-steel down packing Gullett press and packer, four 1951 Murray saw type lint cleaners, one Minneapolis-Moline NEV 240 h.p. with transmission equipment.—J. P. Bowlin Gin, LaFeria, Texas.

FOR SALE—4-80 saw air blast gin, complete except power. Will sell all or any part.—J. C. Frost, Douglassville, Texas, Phone 34F3, Marietta, Texas.

FOR SALE: 5-80 saw Continental all-steel Model C air blast gin stands equipped with latest type smooth top gin ribs.—Gilbert Gin Co., P. O. Box 1029, Carlsbad, N.M.

FOR SALE—To be moved. One complete late model all-steel 5-80 gin plant, less building and wagon scales. In Waco Stock: 7-80 saw late model loose roll glass front Murray gins, 7-80 saw Continental air blast gins with model 30 fronts, 4-80 saw Continental brush with V-belt drive. 5-66" Continental V-belt Master Double X, 4-60" Hardwicke-Etter V-belt with 4-cylinder after cleaners, 11-60" and 66" Continental Double X and Triple X, 10-60" Super Mitchells and 3-66" Super Mitchell feeders. One 4-80 Lummus conveyor distributor for left hand outfit. Several all steel 50" cleaners, various makes. Three all steel 10' bur machines. New Government type towers and drying equipment. Press pump, rams and casings in practically all makes. Several nice power units including two 100 h.p. electric motors, and two 1210-12-A late model Twin Six MM engines equipped for butane or natural gas operation. Hundreds of other items in good late model all steel machinery and equipment in Waco stock and ready for prompt delivery. For your largest, oldest and most reliable source of used and reconditioned gin machinery, contact us. Qualified graduate engineer to assist you with any of your machinery problems at no obligation. Call us regarding any machinery or complete plants you have for sale or trade.—R. B. Strickland & Co., 13-A Hackberry St., Telephones: Day 2-8141, Night: 3-7929, Waco, Texas.

FOR SALE—Murray big reel drier complete with separator, good condition $500. Murray bur machine, all-steel, 10'. Saws and brush in good condition, $400. One MM 185 h.p. engine, natural gas, with skid rails, $1500. One 75 h.p. electric motor with switch, reduced voltage starter. Machinery may be inspected at Colley Gin Co., Edinburg, Texas. Tom Colley, owner mgr., Phone DU3-3222, Box 572, Edinburg, Texas.

FOR SALE—Continental cotton gin equipped with Super Mitchells, electric motors, good machinery. Will sell part or all.—Mrs. C. B .Martin, Telephone 1408, Guthrie, Okla.

FOR SALE—4-90 modern Lummus outfit, overhead cleaners and lint cleaner, all one-story press and steel building. Ginned less that 2,500 bales.—J. W. Gibson, Madison, Fla.

FOR SALE—Modern cotton gin, complete electric, located in one of state's heavy cotton-producing counties. 75% of machinery installed during last three years. All Murray equipment; three 90-saw gins; Super Chief Mitchell feeders; big reel and 24-shelf tower driers; two 6-drum horizontal and one seven inclined cleaners; 14' bur extractor; combing type lint cleaners installed this year. Well located with pavement on two sides. 3 blocks from public square. Only two gins in city. Reasonable financing can be offered to responsible purchaser. Owner wants to retire after 29 years continuous operation. See or write H. L. Saffold, owner, 2710 Washington Ave., Waco, Texas.

Equipment Wanted

WANTED—Used steel cotton press, must be late model, heavy duty, high capacity, preferably upacking.—Box 895, Pine Bluff, Arkansas.

Personnel Ads

WANTED—Experienced ginner repair man to do some repair work and ginning this season. Must be sober and reliable.—211 W. Gayle, Edna, Texas.

WANTED—Experienced ginner, capable of overhauling and operating Murray gin, near Memphis, ginning 4,000 B/C, who can furnish references.—Box KA, c/o The Cotton Gin and Oil Mill Press, P. O. Box 7985, Dallas ,Texas.

WANTED—Day ginner and night ginner to operate 5-80 Murray gin. Start July thru October.—Kainer Gin, Louise, Texas. Phone 2771.

AVAILABLE—All around gin man for year around job or seasonal. Over 28 years experience, repairing, and operating all makes.—Box LM, c/o The Cotton Gin and Oil Mill Press, P. O. Box 7985, Dallas, Texas.

WANTED—Would be interested in hearing from reliable ginner wishing to lease and operate a gin this season.—211 W. Gayle, Edna, Texas.

Power Units and Miscellaneous

FOR SALE—One General Motors, Model M-6110, 235 to 275 h.p. One Le Roi 4-cylinder gas engine, 64 to 95 h.p. One MM gas engine, 105 h.p. One Allis Chalmers 6-cylinder, 150 h.p., with electric starter. One Foos gas engine, 165 h.p. One Fairbanks-Morse 2-cylinder gas engine. One Fairbanks-Morse 4-cylinder gas engine, 250 h.p. One Bessemer 2-cylinder gas engine, 150 h.p. One Skinner 100 h.p. One P.A. 100 unit, with spare parts. Write me for any details you need on any of these power units.—Glenn Wright, Box 230, Morrilton, Arkansas.

FOR SALE—Engines: one L3000 Le Roi, butane or natural gas; two 210 h.p. MM butane or natural gas; two 240 h.p. butane or natural gas. Electric motors from 3 h.p. to 150 h.p., 220-440 volt.—Bill Smith, P. O. Box 694, Phones 49626 and 47847, Abilene, Texas.

FOR SALE—One endless belt 16" wide, 34'5" long. One endless belt 16" wide, 47' long. 80' 9" of 2-15/16" line shaft complete with 4 couplings and 15 bearings and stands. Variety of steel split pulleys. Two adjustable idlers for 16" belts. One 14 x 16 Skinner engine in good shape. Three steam press pumps. Two boiler feed pumps.—Farmers Co-op. Society of Acuff, Route 1, Lubbock, Texas.

FOR SALE—New and rebuilt Minneapolis-Moline engines, from 35 h.p. to 220 h.p.. call us day or night for parts and service.—Fort Worth Machinery Co., 913 E. Berry St., Fort Worth, Texas.

FOR SALE—One 300 h.p., type 4, style VA, 257 R.P.M., Fairbanks-Morse engine. Complete with clutch and water pump.—Thomas Bros. Gin, Rt. 3, Post, Texas (Grassland). Phone FC-5373 or FC-5477, Tahoka, Texas.

FOR SALE—Storage tanks, 10,000 gallon tank car tanks cleaned inside and in good condition.—Keith Railway Equipment Company, Box 348, PLaza 9-4406, Longview, Texas.

FOR SALE—8-cylinder 385 h.p. Buckeye diesel engine complete with electric machinery, 250 KW generator, exciter and electrical starting equipment. Unit completely overhauled, cleaned and painted in 1954; operated less than 300 hours since overhaul. Contact Lee Atherton by letter or phone, Federal 3-2112, Archer-Daniels-Midland Company, Minneapolis, Minnesota.

INSPECTIONS and appraisal, Dismantle and installation.—Oscar V. Shultz, Industrial Engineering, Phone BUtler 9-2172, P. O. Box 357, Grapevine, Texas.

FOR SALE—One Reliance 3 h.p. motor. One direct connected 5 h.p. motor. One General Electric 50 h.p. motor, 2200 volt. One induction type 50 h.p. motor, GE, 2200 volt. One Westinghouse 75 h.p. motor, 2200 volt. One General Electric 75 h.p. motor, 2300 volt. One Fairbanks-Morse 75 h.p. motor, 2300 volt. One starting compensator, 50 to 75 h.p., 2200 volts. Will be glad to furnish detail information on any of this equipment.—Glenn Wright, Box 230, Morrilton, Ark.

FOR THE LARGEST STOCK of good, clean used gas or diesel engines in Texas, always see Stewart & Stevenson Services first. Contact your nearest branch.

FOR SALE—100 h.p. Fairbanks-Morse engine and 40 h.p. engine. Priced reasonably. Both engines in good condition. Write, wire or call D. B. Standridge Gin, Route 1, Moody, Texas. Phone 345, Moody.

FOR SALE—One 120 h.p. VA 257 Fairbanks-Morse diesel engine, complete with clutch. Good condition.—Kainer Gin, Louise, Texas. Phone 2771.

FOR SALE—One 175 h.p. 24 x 48 steam engine, one 66' x 16" boiler, 110 lb. pressure, one 66' x 16" boiler, 105 lb. pressure, one endless leather belt 19" wide x 128'5" long. All in perfect condition.—Phil Pointer & Son, Panola County, Como, Mississippi.

• Pigs Can Eat High Proportion of Fat

PIGS can use large proportions of fat in their rations, but carcasses from high-fat rations may be undesirably soft, North Carolina researchers have found.

They found that pigs could utilize animal fat (yellow grease) in rations at a level up to 41 percent but the carcasses from the high-fat rations were classified as soft. There was some scouring on the high-fat rations, which may have been caused by the high protein content.

Average daily gains were about 1.50 pound per day for 60-pound pigs fed to 190 pounds and about 1.75 pounds per day for 40-pound pigs. The main difference between the high-fat and control ration of corn, soybean meal and supplements was the feed consumption per day and per hundred weight of gain. The control pigs ate about six pounds per day and required about 360 pounds per hundred weight of gain, compared to about four pounds and 250 pounds for the high-fat ration.

The researchers said: "The results of this experiment indicate that pigs are able to utilize large amounts of animal fats in their diet. Increasing the fat content of the ration brings about a marked reduction in pounds of feed required per pound of gain, and where the calorie-protein ratio is adjusted to compare with corn-soybean meal type rations, the carcasses are not greatly different."

• Turkey Hatched From Unfertilized Egg

A TURKEY POULT is the first of parthenogenetic origin to hatch from the unfertilized egg and live for more than a few hours. The poult hatched at USDA Research Center, Beltsville, Md., on March 22, lived 12 days.

USDA poultry husbandmen discovered parthenogenesis, reproduction by the development of unfertilized eggs, in turkey eggs four years ago. Parthenogenesis may help research workers to investigate the most serious problems facing the turkey industry, those of fertility and hatchability of eggs. In experiments at the Research Center a large number of embryos have formed, but only a few developed to final stages before dying in the shell, and only four have pipped their shells and hatched alive. Of these, one bird hatched two years ago from among 5,000 infertile eggs, lived for 18 hours. Three have been hatched in experiments this year with some 3,000 infertile eggs. Of the three, one lived eight hours, the second only five hours. Parthenogenesis is a natural function in many lower forms of life such as bees and aphids.

New Mexico Tests Soybeans

SOYBEANS are being tested as an oilseed crop for New Mexico in cooperative demonstrations on farms sponsored by New Mexico A. & M. Department of Agricultural Services. Luna County Agent Leroy Hoffarth is shown with a Lee soybean plant grown on the Bud Lewis farm at Deming. Lee soybeans yielded 31 bushels per acre in the test, the long-season Dorman variety 36 bushels and the short-season Clark (which can be planted after spring barley) made 30 bushels. With more experience, farmers believe they can increase these yields.

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ESTABLISHED IN 1935

• Cross Plowing Cuts Cotton Hoe Bill

CROSS PLOWING cut the cotton hoe bill by two-thirds and made harvesting easier in 1955 for T. H. Jacks, who farms near Greenwood, Miss.

Compared to conventional chopping it did not account for much gain in yield. The main advantage was in reducing the costs of production.

As a sort of check on the economy of cross plowing, he happened to have as part of a 60-acre cross plowed field a small triangle of about an acre where conventional cultivation was more practical. There was no apparent difference between the two in soil, fertilization, insect control or other factors.

In his cross plowing, he set his sweeps very shallow and plowed after showers at intervals of about a week or less. He plowed three times one way and three times the other way.

His spacing for cross plowing is 40 inches from center to center of the hills. He leaves seven to ten inches in the drill, or hill width, depending on the stand.

The first hoeing of the cross plowed cotton cost $1.25 per acre. Two later hoeings there each cost $1 per acre.

This $3.25 total per acre for hoeing the cross plowed cotton compares to $10 for the "check" acre where conventional cultivation was practiced. The first hoeing of the non-cross plowed cotton cost $4, and this was plowed three times in one direction.

The stalks in the "check" area with conventional cultivation grew so close together that the bottom crop was a relatively light one. On the other hand, the more open cross plowed cotton was setting a good crop early in the season.

THIS cross plowed cotton was fruiting well over most of the stalk last Aug. 18 when T. H. Jacks, left, Mississippi farmer, showed it to County Agent J. S. McBee.

Cotton with conventional cultivation yielded a bale and a quarter per acre, despite the poor bottom crop. The yield for the cross plowed cotton was a bale and a half.

The non-cross plowed cotton was much harder to pick by hand, Jacks reported.

This was his third year of experience with cross plowing.

"Cross plowed cotton will get up and go quicker," he observes.

All of his cotton was planted on sandy loam soil, a little low but still good cotton land.

This land was back in cotton in 1955 after having been in soybeans for the previous eight years. Giving cotton land a rest by planting a legume on it is a worthwhile practice, Jacks believes. It helps to prevent "burning" on the plants and to produce bolls of good size.

On both the cross plowed and the adjacent chopped cotton he fertilized with 65 pounds of actual nitrogen per acre under the crop and 25 pounds per acre as side dressing, all in the form of anhydrous ammonia. He poisoned it all as needed, this being a total of 14 times. The variety was Delta and Pine Land 15, planted on May 10.

The entire Hayward and Jacks farming operation included 530 acres in cotton in 1955. County Agent J. S. McBee of Greenwood regularly advises Jacks.

■ **HENRY VOLLE, formerly advertising manager of the corn division of A. E. Staley Manufacturing Co., has been promoted to assistant manager of the grocery products department. GENE STALEY, formerly soybean division advertising manager, has been named to the position left by Volle.**

OVER THE YEARS

BOARDMAN SUPERBLAST FANS

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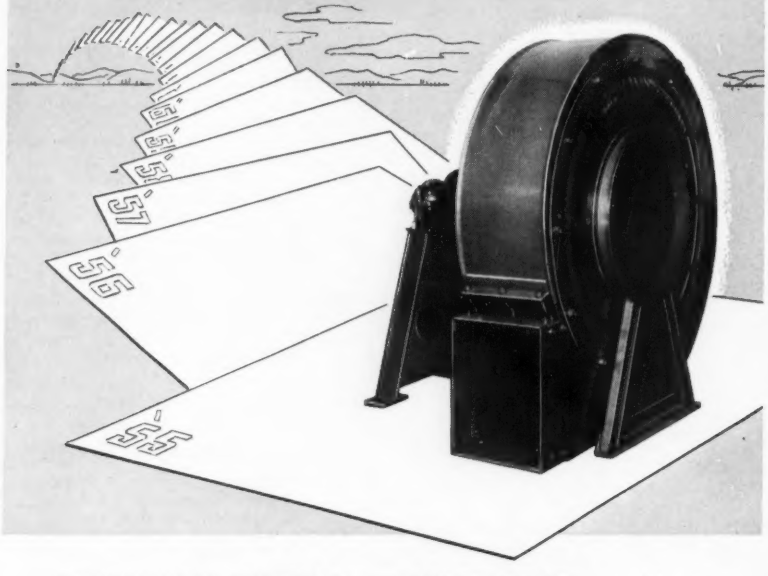

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EASY TO REPAIR . . . with *sectional* scroll and replaceable blast-wheel *blades*.

LONG-LASTING . . . with thick, sturdy steel or cast-iron scroll and big, heavy-duty shaft and SKF bearings.

LIGHT ON POWER . . . with smooth-running, well-balanced blast-wheel that runs easier than many lighter fans.

VERSATILE . . . with housing easily adjustable to 8 different positions; changes jobs without cost of new fan.

Makers of CONVEYING FANS, CONVEYOR BOXES AND COVERS.

THE BOARDMAN CO.
OKLAHOMA CITY
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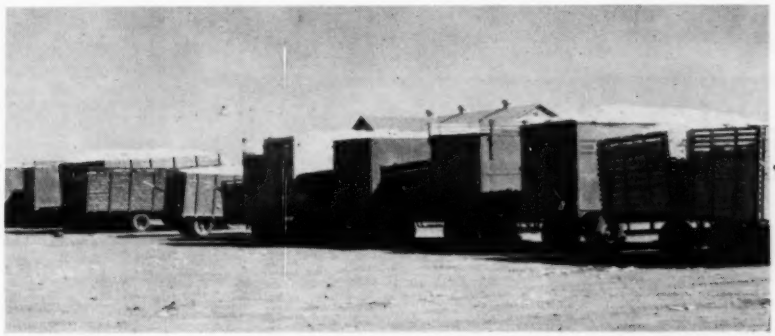
BRANCH OFFICE: TULSA, OKLAHOMA

Developments During 1955 That Affected Cotton Ginners

The 1955-56 crop of cotton has been a record breaker in many respects. The lint per acre yield was undoubtedly the greatest ever produced and it was ginned on fewer but better gins.



Texas Cottonseed Crushers' Association Photo

TRAILERS, bursting with their part of last year's high yield, sit in busy gin yards waiting their turn for high quality ginning.

ALTHOUGH complete figures are not yet available on the 1955-56 U.S. cotton crop, it will go down in history as a record breaker in many respects. It had a national average lint yield estimated at 416 pounds per acre—the highest in history. It probably used the least man hours per bale. It is likely that records will later show that it used more fertilizer and more insecticides per acre than any previous cotton crop. There were more mechanical pickers and more mechanical strippers at work on cotton farms and they harvested a greater percent of the crop than ever before. The hand picked portion of the crop probably reached an all-time low. This crop was probably ginned on the smallest number of gins to operate since the turn of the century. (See Tables I, II, III, and IV.)

Table I—U.S. Cotton Lint Production

Average	Acreage Harvested Thousand Acres	Lint yield per harvested acre Pounds	Production 500-lb. gross wt. bales Thousand Bales
1944-53	22,096	279	12,952
1954	19,251	341	13,696
1955 (Dec. 1 Est.)	16,882	416	14,663

Source: Crop Production Annual Summary, AMS, USDA.

Table II—Mechanical Cotton Harvesting Machines on U.S. Farms.

Year	Mechanical Pickers	Mechanical Strippers	Total
1949	2,960	6,500	9,460
1950	3,900	7,980	11,880
1951	7,325	13,735	21,060
1952	11,910	17,060	28,970
1953	15,600	19,250	34,850
1954	17,000	22,000	39,000
1955	*20,000	*24,000	*44,000

*1955 figures are tentative. Source: National Cotton Council of America.

Table III—Active and Idle Cotton Gins in U.S.

Year	Total Gins	Active Gins	Idle Gins
1910	29,380	26,234	3,146
1920	21,876	18,440	3,436
1930	16,649	14,508	2,141
1940	13,119	11,650	1,469
1945	11,048	8,632	2,416
1950	8,862	7,570	1,292
1954	7,800	7,069	731

Source: U.S. Dept. of Commerce, Bureau of the Census.

Table IV—Methods of Harvesting U.S. Cotton Crop.

Year	% Hand Picked	% Hand Snapped	% Machine Harvested
1949	68	26	6
1950	71	21	8
1951	61	24	15
1952	63	19	18
1953	57	21	22
1954	54	24	*22

*16% of Crop Machine Picked. 6% of Crop Machine Stripped. Source: Agricultural Marketing Service, USDA.

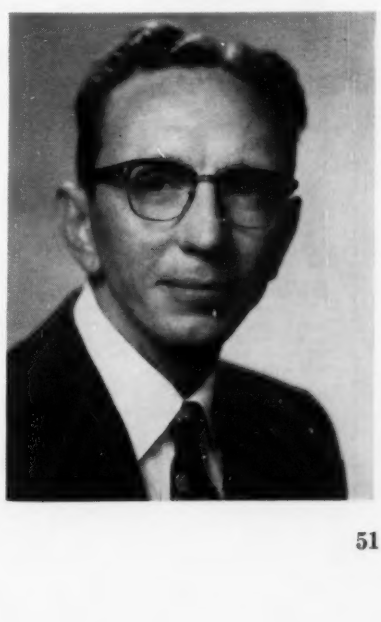
The USDA figures for the percentage of the U.S. crop harvested mechanically in 1955 are not yet available but the writer believes they will show an increase, probably to 25 percent of the crop.

So, the intensified effort by farmers to increase per acre cotton production and to use every possible chemical and mechanical means to save labor and reduce costs finds the ginning industry with fewer but better gins to process the crop. In the keen competition among ginners to increase volume, plant modernization has been the principal "forward step" to better service.

Cotton gin improvement continues in every state as the obsolete gins tend to add new equipment or be forced out of business by competition. But the greatest gin machinery improvements generally are found in areas where mechanical harvesting has proved successful and economical. Lest it be overlooked, let us pause here with a tribute to the ginning industry for its "forward look." Cotton mechanization would not have been possible without improvement in cotton gins—and ginners spent large sums of money in the calculated risk that mechanization would come to stay.

These same ginners are evidently satisfied that that risk was justified, because throughout the country most of the better gins continue to add new im-

(Continued on Page 60)



By ALFRED M. PENDLETON

Extension Engineer, USDA

International Cotton Groups To Meet

Representatives of cotton trade associations of Belgium, England, France, Germany, India, Italy, Japan, The Netherlands, Spain and the U.S. will meet in Washington, May 21, for the eleventh International Cotton Standards Conference, USDA announces.

The conference has been called to examine and approve the Universal Cotton Standards prepared by USDA under the U.S. Cotton Standards Act.

Under provisions of this Act, as amended, the Secretary of Agriculture is authorized to effectuate agreements with cotton associations, cotton exchanges, and other cotton organizations in foreign countries for (1) the adoption, use, and observance of the universal standards of cotton classification, (2) the arbitration and settlement of disputes regarding classification and (3) the preparation, distribution, inspection, and protection of the practical forms of the copies of the standards under such agreements.

Under the standards agreement, foreign associations have, in the past, agreed to use U.S. grade standards for upland cotton as a purchase and sale basis of U.S. cotton in which grades are specified. The agreement also provides for a meeting to be held every three years to examine currently adopted standards.

In addition, the conference will give consideration to physical standards for spotted cotton, a descriptive standard for Strict Good Middling cotton, and other topics.

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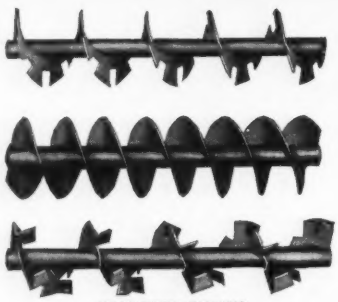

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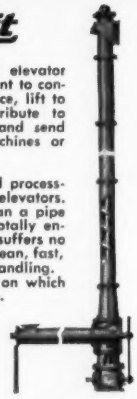

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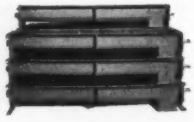

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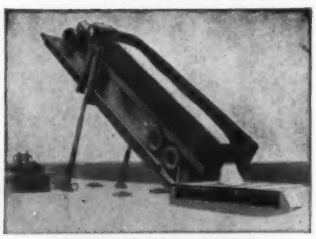

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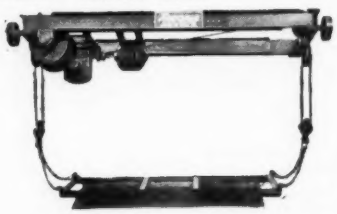

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• Seed Sterilization At Gins Is Ended

TEXAS has officially announced that it is no longer necessary to sterilize cottonseed at gins to control the pink bollworm. The announcement is the result of USDA and state research which was summarized in the March 24 issue of The Press, which forecast that Texas would issue the order the following Monday, as was done.

The text of the Texas announcement, and information from regulatory agencies in other states received by The Press follow:

• **Texas** — Commissioner of Agriculture John C. White has announced that sterilization of cottonseed during ginning no longer is necessary for seed moving within the state.

Until now, some 928 gins in 127 counties have been required to treat seed with high temperatures as an insect preventive measure. These gins normally process about one million bales each year with the additional sterilization cost of $1 per bale charged to the farmer.

The change resulted from findings of a three-year research project by Texas and USDA pest control men, White said. Studies of cotton processed by modern ginning methods in Texas showed the lowest kill of larvae to be 89.5 percent, and the highest, 100 percent. All but five gins killed 97 percent or more and 18 gins registered complete kills in the survey.

White said USDA officials are in agreement with the regulation change in Texas.

• **Arkansas**—"Our present regulations require heaters in gins and I am unable to say whether there will be any change. If there is a change, this will have to be made by the State Plant Board."

• **Mississippi** — "The change will not change our requirements in the least. At present, we require that cottonseed be properly fumigated before being allowed entry and we will still require fumigation."

• **New Mexico**—"We are removing the requirement of cottonseed sterilization at New Mexico gins. We probably shall make some revisions concerning transportation of seed and other cotton products before the next ginning season."

• **Oklahoma** — "Removal by Texas of gin sterilization will not affect this state. Oklahoma has never required gin sterilizers and is willing to accept the research findings as basis for control programs."

Corn Pest Attacks Cotton

The corn borer threatens to become a new pest of cotton, entomologists point out. Long an enemy of corn in the Midwest, the borer attacked cotton on a small scale last season in Missouri and Tennessee, causing cotton stalks to wilt. In a few cases, the borer attacked bolls in much the same manner as bollworm.

Finland To Buy Cotton

Sixteen thousand bales of cotton are included in a PL 480 purchase agreement announced between USDA and Finland. Value is approximately $2,860,000.

Hot-Water Treatment Aids Germination

A NEW HOT-WATER TREATMENT of cottonseed may result in better and quicker stands of S-1 long staple cotton this spring. Arizona and New Mexico tests show the low germination of the hard S-1 seed was increased about 25 percent by the treatment. Paul Hanks, right, owner of New Mexico Delinting Co., Mesilla Park, N.M., is shown discussing the new hot-water treating equipment at his plant with Marshall O. Thompson, manager of the Mesilla Co-op Gin.

British Eat Less Margarine

Butter consumption during 1955 in the United Kingdom increased about 3.8 percent, while margarine use declined about the same degree, according to reports to USDA. Consumption is about 17.8 pounds of margarine and 14.7 pounds of butter per capita; prewar average was 24.7 of butter and 8.7 pounds of margarine.

New Product

SHED-A-LEAF "D" IS NEW COTTON DEFOLIANT

Shed-A-Leaf "D", a cotton defoliant for dust application, has been announced by Chipman Chemical Co., Inc., Bound Brook, N.J. This new product will be available in the cotton states east of and including Texas.

Shed-A-Leaf "D" is a white dust and is applied by either airplane or ground dusters. It is non-irritating to people handling and using it. It is non-poisonous and does not corrode equipment.

Chipman Chemical Co. has been manufacturing Shed-A-Leaf defoliants for over five years and, in addition to the new dust, the company produces liquids and soluble spray powders.

Information on Shed-A-Leaf may be obtained from the manufacturer, or The Cotton Gin and Oil Mill Press, P.O. Box 7985, Dallas 26.

Nyasaland Project Frees Flood Land for Cotton

Nyasaland, smallest, but most densely populated of the three territories of the Federation of Rhodesia and Nyasaland, has announced the beginning of a 10-year, large-scale irrigation and hydro-electric project in the Shire River Valley to cost about $215 million.

The project is a control measure taken to prevent periodic flooding of 120,000 acres or more which will be put into cotton and some food crops. Most of Nyasaland's present cotton production varies from 9,000 to 13,000 bales annually; the bulk of which is exported to the United Kingdom.

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JOHN MOLONEY

Analysis of an outlook for cottonseed products is not susceptible to firm prediction due to the wide variety of factors it involves. Probably the most important of these factors is the government, which plays a big role in product markets.

Appraisal of Outlook for Cottonseed Products

By J. F. MOLONEY
And G. A. HARPER
Secretary-Treasurer and Assistant Director, Educational Service, Respectively, National Cottonseed Products Association

GARLON HARPER

AN APPRAISAL of the outlook for cottonseed products involves a wide variety of factors and conditions that are not susceptible to firm prediction. Probably the most unpredictable of these involves the activities of the political agencies—i.e. government. While there have been up and downs, these activities have had increasingly important effects upon product markets during recent years.

As this is written, Congress is considering general agricultural legislation that can have far-reaching effects upon the cottonseed crushing industry. The administrative agencies — particularly USDA—are deeply involved in a wide variety of programs that affect the markets for cottonseed oil, meal, hulls and linters.

No attempt will be made to forecast the shifts in administrative policy that may occur in an election year. Rather, it is proposed, very briefly, to review some of the major factors currently operating in cottonseed products markets and to suggest in a very general way their possible future significance.

• **Oil** — Developments in the oils and fats markets during the current season have run contrary to what most experienced observers anticipated when the season opened. At that time, all indicators pointed to an output of food fats far in excess of any previous level. While there were some revisions in the original crop estimates as the season progressed, these indicators have proven correct and a new production record is being established.

With this record supply in prospect, prices last fall were extremely weak. In October, cottonseed oil was bringing as little as 10⅝ cents (Valley) and soybean oil sold around 10 cents (Midwest). As this is written (March), the two oils are quoted at 14 cents and 13¾ cents respectively. While domestic consumption has been at a high level, it is generally agreed that the factor principally responsible for the rise in prices since early in the season is export demand.

This export demand began to make itself felt in October. It was of two types: regular commercial demand made effective with private funds and demand stimulated by Public Law 480. A significant volume of cottonseed oil moved through regular commercial channels to Western Europe during the early part of the season. This type of trade was of major importance during the early years of the industry. For the past 20-25 years, however, little American cottonseed oil has been exported. A number of observers attribute the revival of this trade to last season's sale of CCC stocks of cottonseed oil, accumulated under cottonseed price support programs. As a result of such sales, a number of European plants used cottonseed oil for the first time in many years and they were favorably impressed with its performance. At the prices prevailing early in the current season, they came into the American market to buy oil on a commercial basis.

As the season has progressed, the demand stimulated by P. L. 480 financing has substantially exceeded commercial demand. Actually, by pushing up prices, P. L. 480 has operated to reduce the volume of commercial exports. Since last September, USDA has issued P. L. 480 purchase authorizations of approximately $99 million for edible fats and oils. It is estimated that about 650 million pounds of such oil and fats will move to export as a result of these authorizations. Most authorizations give the buyers the choice of cottonseed oil, soybean oil or lard. A few have specified vegetable oils only and a few have been limited to lard. The bulk of the exports have moved in the form of oil.

In addition to P. L. 480 authorizations, I.C.A. has allotted some $12 million this season for the purchase of fats, oils or oilseeds. More than half this amount has been applied to soybeans which are not currently eligible for P. L. 480 financing.

As a result of this government activity, total exports of edible fats and oils are estimated at 15-20 percent above last season's level. In a season with the greatest supply on record, a generally "tight" condition has been created in the vegetable oil market. This is a situation to the liking of sellers, especially for the short run. Some of its disadvantages should not be overlooked, however. The tendency for commercial export trade to dry up as public funds were pumped into the market has already been noted. In the domestic market, the price rise brought about by government-financed exports has improved the competitive position of animal fats relative to the vegetable oils. The former have experienced no price rise comparable to that of the latter. Priced 4-5 cents per pound under crude cottonseed oil, lard and other edible animal fats are attractive as raw materials to the manufacturer who can use them to replace cottonseed oil in his products and they are being so used in increasing volume.

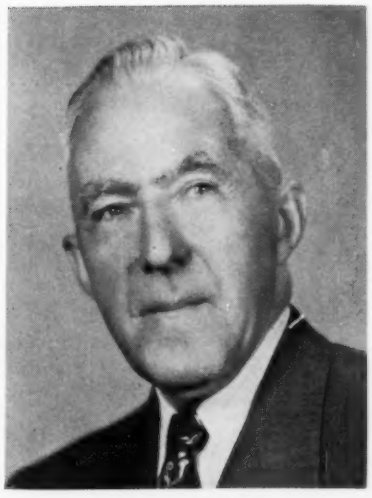
Generally, it is felt that the tightness

(Continued on Page 64)

Once confined to Western States, irrigation is becoming a standard practice in all areas, helping to compensate for uneven rainfall.

Irrigation's Spread in The Cotton Belt

By IVAN D. WOOD
Extension Agricultural Engineer
Federal Extension Service



IVAN D. WOOD

IRRIGATION, once confined to the 17 Western States, is now becoming popular in the South and East where the annual rainfall sometimes reaches 50 inches or more. Why this interest during the past few years?

There are several reasons, but the prinicpal one is probably the drouth which has extended over the region. Periods of low rainfall, 30 days or more in duration, have been common. A careful survey of the rainfall pattern over the past 25 to 30 years shows that there are few years when irrigation would not have been profitable on many crops.

A farmer in Arkansas hit the nail squarely on the head when he named the rising cost of production as a second cause for the popularity of irrigation. He told of the cost of producing a cotton crop, as an example. There was the cost of seed, of cultivation, of insect control, of fertilizers, harvesting and ginning. He named a figure of $106 per acre as the total cost in his case. He said that he could not afford to lose this investment by sudden drouth. He thought the best way to insure it was by irrigation.

Other causes which might be named are the emphasis being placed on portable sprinkler equipment by the various manufacturers and better distribution of knowledge as to the advantages of irrigation even in years of normal rainfall.

In the West, irrigation is a must. A farmer either irrigates or limits his production to dryland crops and low yields. Irrigation know-how is second nature to farmers of this region. They have grown up with it and it has become a part of their very life.

In humid and semi-humid areas, irrigation is new and there is a lot to know about it, if one is to be successful. True, some farmers, even in humid states, have irrigated profitably for many years and have learned mostly by trial and error how the job is successfully done.

• **Water Supply** — One of the first considerations for the beginner is the source of supply. Great quantities of water are required even in supplemental irrigation. It requires over 27,000 gallons to cover an acre just one inch deep. To cover 100 acres one inch deep would require a tank of water 208 feet square and over eight feet deep.

Some areas are fortunately situated over vast underground supplies. Properly constructed irrigation wells furnish bountiful supplies for all irrigation needs. Information about underground supplies may be had from the U.S. Geological Survey at Washington, or from the local County Agent or Soil Conservation Service. It does not pay to spend money on wells until the underground supplies have been investigated.

Large streams often form a good source of supply, but small ones are often very unreliable. A farmer in North Carolina told me that he did very well pumping from a small stream to irrigate his cotton field until all of his neighbors got the same idea. Now there is not water enough for anyone. In the absence of adequate water laws, there is little any of them can do about it. In most Western States the first man to use the water and to get a water right has the prior right to its use. One of the greatest irrigation needs in Southern and Eastern States is an adequate set of water laws.

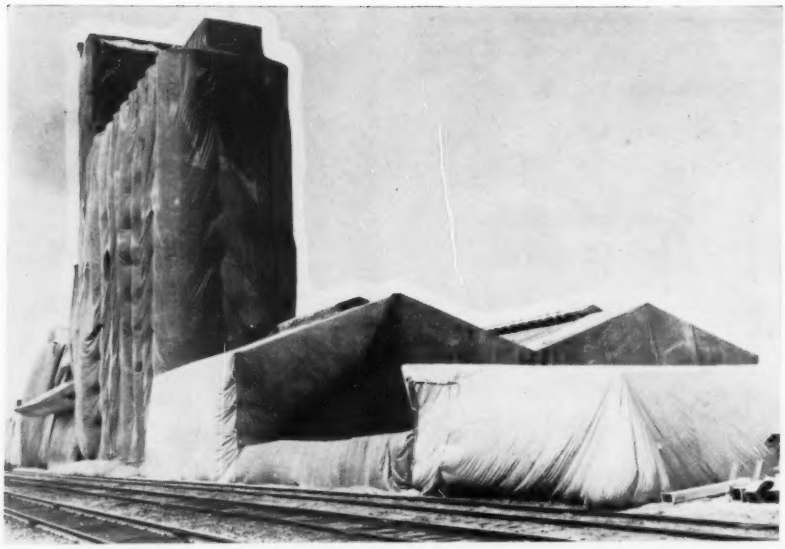
Larger lakes are usually dependable sources of supply, but small farm ponds are not. Many a new irrigator has been surprised to find that the farm pond he thought was large enough was pumped dry in a few hours. It should be remembered that farm ponds, and even some sizable lakes, go dry when the irrigation water is most needed during the hot summer months.

In some of the Southeastern States, it is possible to get fairly dependable supplies from large trenches dug with a drag-line. These are located in such a way that they intercept seepage from sandy areas. The rain water falling on the light soils seeps down to an impervious layer, follows the layer to an outcrop where seepy spots or springs appear. A trench located at these springy spots will often collect a fairly good water supply for a small acreage.

• **The Conservation Plan** — It is a well-established fact that the irrigation system should be designed to fit the farm and the individual fields. A well-made conservation plan takes into consideration the soil, the topography, the size and shape of fields and their relationship to the water supply, the crops to be

(Continued on Page 68)

OKLAMOHA FARMERS attend a demonstration of water application with siphon tubes. Uniform application of water to a crop is one step toward high application efficiency, the author reports.



AN ENTIRE WAREHOUSE covered with tarpaulin for fumigation to eliminate the Khapra beetle is shown in this USDA picture. The accompanying story tells how this threat to grain and feed products has been controlled.

• Khapra Campaign Has Made Good Progress

USING acres of tarpaulin and tons of gas, federal and state control authorities have made good progress in controlling a serious threat to grain and feed firms and other industries in the Southwest. This threat is the Khapra beetle, whose appearance in the U.S. within recent years caused great concern among cotton oil mills and others.

A USDA publication, Agricultural Research, recently described the drive against this pest as follows:

Beetles have been eradicated in more than half the space infested—52 million out of 93 million cubic feet. At the same tim, quarantine of premises and treatment of host commodities and grain sacks intended for reuse have kept this dangerous insect pest from spreading.

Inspection is continuing, to make sure that every beetle or larva is found. Quarantine and fumigation will follow as needed. As of Jan. 1, USDA officials had inspected 27,601 properties in 29 states. They found 79 infestations in Arizona, 223 in California, and four in New Mexico. In New Mexico, three infestations have already been fumigated and cleared; so have 30 in Arizona and 100 in California. USDA, state agencies, property owners, and chemical and pesticide industries are working together on the campaign.

Called the world's worst pest of stored grain, the Khapra beetle reproduces at a prodigious rate, is difficult to reach and kill, and thrives or survives in any latitude of the U.S. Because it is no larger than a flea — adults measure about one-sixteenth inch—it is often overlooked and carried about on workers' clothing or on grain sacks. Sometimes the beetle is mistaken for other similar storage insects and allowed to go unchecked.

Larvae can survive without food for as much as three years—and then vigorously resume eating and growing when the building they are in is refilled with grain. Their flexible life cycle from egg to adult helps them adapt to any condition; in California, for example, the cycle varies from 26 days at 90° to 193 days at 70°.

• **Control Difficult** — Many problems have hampered eradication, USDA points out. Conventional spray methods cannot reach Khapra beetles hiding in incredibly tiny cracks in masonry and woodwork. These small insects even work their way through walls to the outside of the building. Researchers found that fumigation with methyl bromide killed all the beetles when it penetrated into and through the walls. But the entire building had to be covered with gas-impervious tarpaulin to hold the fumigant—outside as well as inside—at a lethal concentration.

The enormous quantity of nylon plastic tarpaulin required—9.5 acres in one case—was a problem in itself; it had to be made to order at $2 per square yard. Workers adapted clamps to hold the tarp pieces together with airtight seams. The operation had to be done when little wind was expected because winds normally prevalent in the Southwest can tear or loosen the covering.

Researchers found that gas penetrated more effectively and quickly when air was drawn out and the gas circulated by fans, so forced air circulation systems were devised. Probes with perforated tips attached to hoses and vacuum cleaner motors were placed about the building and inserted into bulk grain to circulate the gas. Similar probes conveyed methyl bromide samples to the gas-analysis station located outside the building for testing. Constant checks on gas concentration were necessary since some seeds or meals absorb the fumigant and reduce the concentration in the building. When this happened, additional fumigant was pumped in. Highly sorptive material had to be covered and given more gas.

Although the eradication measures have been costly and difficult, they are well worth while. In California, fumigating operations to date have cost only one-half of one percent of the value of the crops they protect.

Sudanese Cotton Crop Largest on Record

Estimated at 419,000 bales, the 1955-56 cotton crop in the Sudan is the largest on record, USDA says. Production was about 400,000 bales in each of the last two previous seasons.

Cotton acreage for the 1954-55 crop was estimated at 685,000 acres, to mark the fifth successive year of acreage expansion during which time the increase has averaged about 50,000 acres annually. The 1955-56 acreage is estimated by private sources at 720,000 acres. Long range plans for cotton production in the Sudan are for expansion to approximately one million acres within the next 10 years.

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28 Percent More Spent For Livestock Feeds

Farmers spent 28 percent more for livestock feeds in 1954 than in 1949, the Bureau of Census reports. Total spent for feed in 1954 was about $3.9 billion, against $3 billion five years earlier.

Feed expenditures by states were as follows:

	1949	1954
Maine	$ 27,828,801	$ 36,886,881
New Hampshire	22,621,237	21,818,232
Vermont	29,204,769	30,165,032
Massachusetts	46,569,736	45,175,557
Rhode Island	5,792,260	4,575,060
Connecticut	38,049,790	41,545,697
New England	$ 170,066,593	$ 180,166,459
New York	$ 169,785,101	$ 171,552,010
New Jersey	70,791,429	88,894,023
Pennsylvania	158,617,147	183,124,547
Mid. Atlantic	$ 399,193,677	$ 443,570,580
Delaware	$ 36,658,449	$ 40,975,476
Maryland	50,906,434	54,978,097
Virginia	55,163,130	72,816,858
W. Virginia	23,856,894	27,039,506
No. Carolina	43,460,211	73,598,231
So. Carolina	17,199,823	23,635,010
Georgia	48,293,763	98,539,947
Florida	31,844,018	46,434,448
So. Atlantic	$ 307,382,722	$ 438,017,573
Ohio	$ 113,898,285	$ 133,736,101
Indiana	109,231,965	155,703,448
Illinois	143,466,302	205,123,578
Michigan	56,924,962	68,137,081
Wisconsin	117,148,782	129,590,273
E. N. Central	$ 540,670,296	$ 692,290,481
Minnesota	$ 119,923,734	$ 154,084,978
Iowa	234,133,345	330,855,507
Missouri	117,654,182	154,380,330
No. Dakota	13,795,720	16,986,828
So. Dakota	37,682,982	44,163,258
Nebraska	92,128,540	130,315,157
Kansas	74,081,339	95,673,773
W. N. Central	$ 689,399,842	$ 926,459,831
Kentucky	$ 41,789,166	$ 47,461,816
Tennessee	34,925,771	46,501,313
Alabama	26,217,160	51,797,945
Mississippi	25,889,511	43,941,814
Arkansas	43,663,080	56,916,758
Louisiana	21,948,657	31,759,219
Oklahoma	55,267,968	77,048,177
Texas	152,247,627	223,604,419
So. Central	$ 401,948,940	$ 579,031,461
Montana	$ 19,884,944	$ 17,221,710
Idaho	24,711,914	26,754,526
Wyoming	16,117,637	13,748,489
Colorado	43,487,520	58,942,617
New Mexico	13,376,544	22,081,394
Arizona	10,172,635	21,138,415
Utah	26,623,369	23,196,647
Nevada	3,905,020	4,491,819
Mt. States	$ 158,279,583	$ 187,575,617
Washington	$ 53,947,578	$ 58,266,135
Oregon	45,423,903	46,324,630
California	258,891,643	319,815,586
Pac. States	$ 358,263,124	$ 424,406,351
U.S. total	$3,025,204,777	$3,871,518,353

• Two-Bale Yields Cut Costs 50 Percent

FARMERS who made two bales or more of cotton per acre in 1955 produced the crop at about half the fertilizer and insecticide costs per pound as those who made less than a bale per acre, records in last year's Georgia Five-Acre Cotton Contest, prove.

W. H. Sell, agronomist-cotton, Georgia Extension Service, divided 571 farmers participating in the program into three yield groups—two bales per acre or more, one to two bales, and less than a bale—for the purpose of studying plant food and insect poison costs per pound of cotton produced.

Sell said 139 contestants made two or more bales per acre. "The average fertilizer and insecticide costs per pound of cotton came to approximately 12 cents," he said.

The cotton specialist stated that the 139 averaged 773 pounds of 4-12-12 fertiliver at plantning time and 45 pounds of available nitrogen as sidedressing. This group averaged eight applications of poison, with a total of 135 pounds of insecticide per acre being used.

The one- to two-bale-per-acre farmers produced cotton at an average of 15 cents a pound for fertilizer and insecticides. They averaged 525 pounds of 4-11-11 at planting, 35 pounds of nitrogen, six applications of poison, and 108 pounds of insecticides—all this per acre.

Farmers in the third group averaged 1,089 pounds of seen cotton per acre, and their records show fertilizer and insecticide costs to be 22 cents per pound of cotton produced. They used 500 pounds of 4-11-11 at planting and 27 pounds of nitrogen as sidedressing. Five was the number of poison applications, and 90 the pounds of insecticides used.

Old Meets New Over Pans Of Steaming Molasses

Steaming molasses cooking pans herald yet another source of farm income as Kemper County, Miss. farmers continue their search for additional cash crops, under the leadership of County Agent R. T. Hobson.

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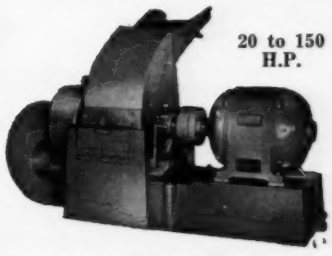

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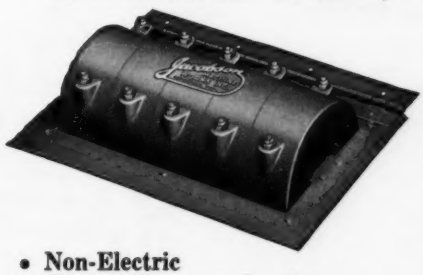

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DALLAS 26, TEXAS

January 31, 1956

reproduced again on opposite page

The Cotton Gin and Oil Mill Press
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Dallas 26, Texas

Gentlemen and friends:

I resent your ad on page 37 of the January 28 edition of The Cotton Gin & Oil Mill Press.

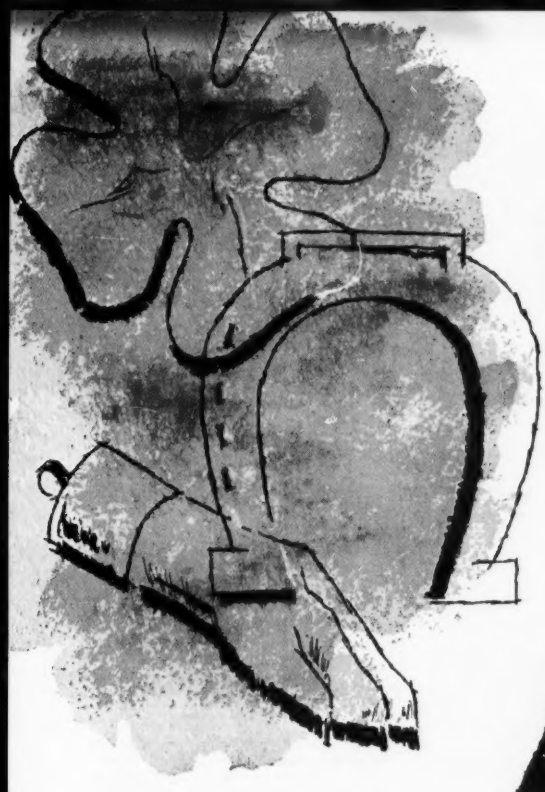
If there is any question of luck involved in the position The Cotton Gin & Oil Mill Press enjoys with the several allied cotton industries - it is the luck of the different associations in having an official publication under the management of such able men as those connected with The Cotton Gin & Oil Mill Press.

It has always been a matter of personal pleasure to me to see this fine magazine continue to grow until it enjoys the unique position it now holds of being read, accepted, and recognized as the official magazine of the entire ginning and oil milling industries. My congratulations, my best wishes, and my kindest personal regards to all the members of the staff of the official magazine for the ginning and oil milling industries.

Sincerely,

Jno. C. McDonald, Vice-President
THE MURRAY COMPANY OF TEXAS, INC.

JCMcD/mk



we're just lucky, I guess

False modesty, of course. It's not luck when a trade publication gets the kind of recognition accorded The Cotton Gin & Oil Mill Press

This magazine is designated as the *official* publication for the National Cottonseed Products Association (oil mills), the National Cotton Ginners Association, and *each* state ginners' association . . . from California to the Carolinas.

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This is our fifty-sixth year of publication

Developments During 1955

(Continued from Page 51)

provements designed to do a better job in the future.

• **Schools Are Helping** — Realizing that better gin machinery alone would not do the "quality" ginning job demanded today, the ginners' associations have stood squarely behind the Extension ginning specialists and the gin machinery manufacturers in their efforts to offer ginners' schools to operators across the Cotton Belt. More than 2,700 operators and owners attended such schools in 1954 and 1955 and many schools are planned for 1956.

In addition, ginners gave full support to the 1955 Quality Harvesting Program carried on in the areas with heaviest mechanical picker concentration by the state Extension Services in cooperation with the National Cotton Council and the manufacturers of mechanical pickers. In dozens of area meetings for picker owners and scores of operator schools that followed, at least half of the nation's cotton picker owners and operators were instructed in proper operation of the mechanical cotton pickers in order to secure highest quality as well as field efficiency.

Ginners should recognize this program as an outstanding example of teamwork to secure better mechanical harvesting. Not only did Extension specialists and National Cotton Council specialists concentrate on this program, but more than 100 county agents and an equal number of farm machinery dealers pitched in to hold meetings and schools for one purpose only—better harvesting with mechanical pickers. This program will continue in 1956 and every ginner should offer his support.

In 1955 ginners did their best to keep up with the rough hand harvested as well as the machine harvested cotton. But weather and harvesting conditions caused the U.S. crop as a whole to drop in quality a little (USDA Cotton Quality Report for Ginnings Prior to Jan. 16, 1956). The grade index of the crop dropped from 95.9 to 93.4. Whereas 11.4 percent of the 1954 crop ginned prior to Jan. 16, 1955, graded Strict Middling, only 6.3 percent graded Strict Middling in 1955. Middling cotton dropped from 36.6 percent of the 1954 crop to 28.4 percent in 1955. However rough preparation, one effective measure of poor ginning, was only 1 percent in 1955. Only a few years ago this figure was 3 percent, 5 percent and sometimes more than 8 percent of the crop. Effective drying and ginning has reduced rough preparation losses to farmers by several million dollars per year—and ginners can take credit for this. Neither could the ginners be blamed for the increase in spotted cotton from 8 percent of the 1954 crop to 16.2 percent of the 1955 crop. Better harvesting must accompany better ginning to protect quality and improve grades. Ginners will have a vital stake in the all-out educational program designed for this purpose.

We will all look back on 1955 as the year in which construction began on the long awaited Southeastern Cotton Ginning Research Laboratory at Clemson, S.C. Surely we will remember the record breaking yields and the continued advances in irrigation, fertilization and mechanization. But closer to home, many ginners will remember this as the year they first saw a moisture testing instrument for ginned lint and seed cotton. A few will remember 1955 as the year they bought one and learned of its usefulness. Many will remember it as the first year they saw the government stick and leaf removing machine operate in a commercial gin. Others will remember the extractor feeders, bur machine attachments and other seed cotton cleaners using this principle in the field.

To some ginners 1955 will be remembered as the year a second dryer was installed in their own gin plants. Others will recall the addition of lint cleaners, green boll and rock traps, modern gin stands, automatic feed control equipment and other machines recommended to keep the gin modern under the conditions of ever poorer hand harvesting and continually increasing machine harvesting.

Because we will be able to recall these changes, 1955 was a good year of ginning improvement. Because more ginners than ever before tried "Seed Cotton Grouping" on the gin yard to gin "like cottons together," 1955 was a year of improvement. Because ginners have given more assistance to research and educational programs than ever before, 1955 was a year of improvement. And, because the ginning industry had the courage to act—rather than to wait—1956 finds it better prepared than ever before to render quality service to the cotton farmers of America.

More Cotton For Less

(Continued from Page 34)

better fit tractor operations. Parallel terraces are possible in some fields, and parallel rows between terraces are possible in most fields.

Disposal of the residue from the previous crop on the land must be done first, of course. The degree of thoroughness with which this should be done depends on the climate, amount and kind of residue, and the tvpe of succeeding operations. In most of the humid areas and irrigated areas where plant growth is great, a power-operated shredder is necessary for thorough shredding, especially if such tools as chemical weed control applicators or rotary hoes are to be used later. Power shredders are versatile. Thev can be used on pastures and crops other than cotton.

• **Investigate Seedbed**—The smart producer will find out what type of seedbed preparation is best for his land. Research results are available in most states on the tvpe of tillage that is most profitable on the soil types of the area. Tests have shown that subsoiling does not generally pay unless there is a compacted zone in the soil which seriously obstructs water or root penetration. Some soils are prone to develop compacted zones and some are not, so the careful farmer may find that ordinary flatbreaking, or his old method of middlebusting, is still best for his land.

There will be very little skimping on fertilizer in 1956. Most growers made as much or more cotton than usual on less acres last year, and they will try to do it again this year by following their state fertilizer recommendations to the letter. The better farmer will have his soil analyzed and check to see if he has the right kind of applicator boot. He will properly set the applicator to put the fertilizer in the right position with the least amount of disturbance of the seedbed. Many will switch to the use of anhydrous ammonia or complete liquid fertilizers if their operation is large enough to make it economical.

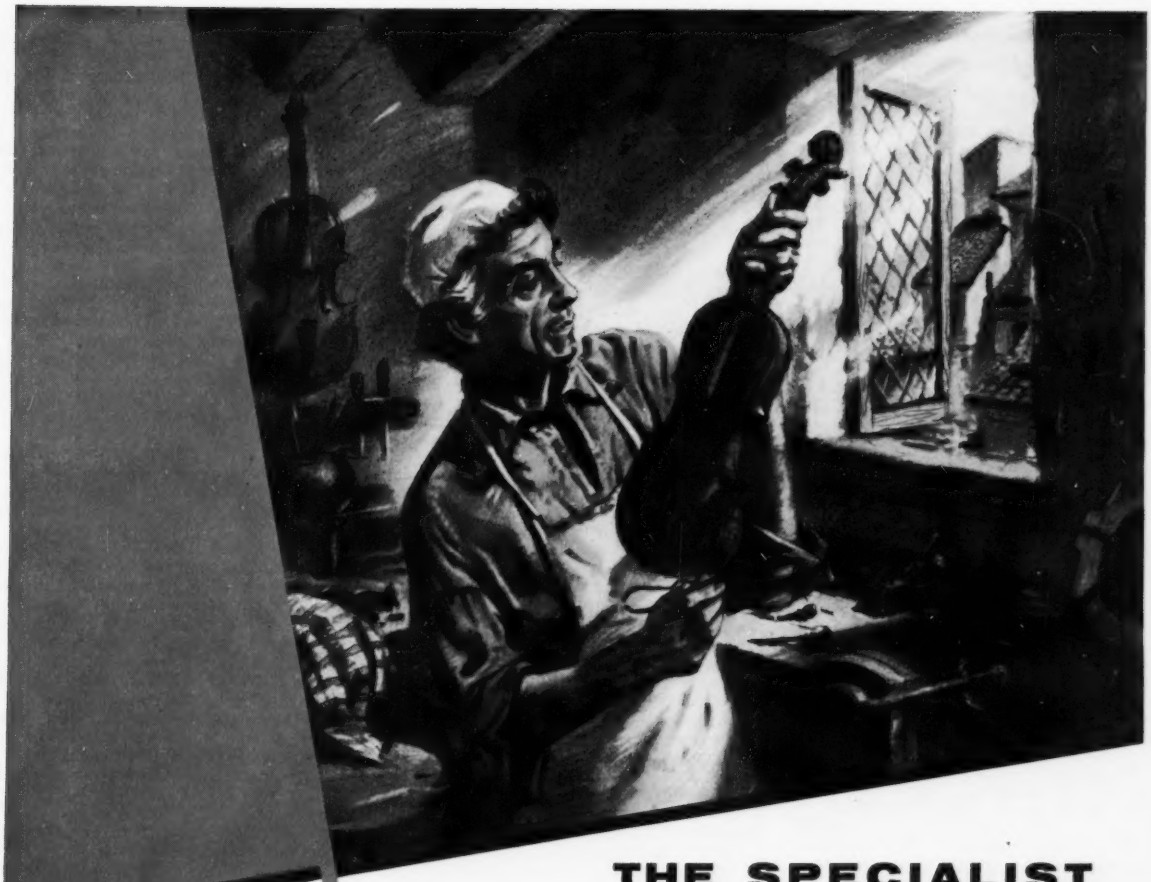
The practice of planting to a stand has been spreading gradually for several years. It will probably spread faster in 1956 because research results showing that it can be done are beginning to reach more farmers. In fact, the safe latitude in plant population per acre is so great that planting to a stand does not require special planting equipment. If the farmer plans to pick with a spindle-type picker he can be satisfied with a stand of 20,000 to 50,000 plants per acre. His picker will usually operate better in the upper range of these populations, so he will probably shoot at 40,000. He can either drill or hill-drop, depending largely on whether or not he is using a pre-emergence herbicide. If he plans to use a stripper-type harvester, he will drill to a stand hoping to get about 50,000 plants per acre. Chopping will probably not be necessary since the stnd that actually emerges can be 20,000 more or less than this and not have much affect on the yield.

Replanting is expensive. Although special planting equipment is not necessary to plant to a stand, it will often help get that stand up. More interest will be taken in the fine points of a planter and its attachments. For example, more farmers in the dry areas of the Southwest and Far West will become aware of the advantages of planter furrow-opener attachments that disturb the least amount of precious moisture, drop the seed in a clean furrow and press them in with a soft-rubber seed press wheel before covering.

• **Hoeing Just Holds Own**—It is doubtful that many producers will completely discard their hoes this year, but there will probably not be many new hoe handles sold. Since hand hoeing for weed control is still the major bottleneck to complete mechanization, an all-out effort will be made to minimize it. Many farmers who have used chemical herbicides and flame for weed control on a trial basis will apply them on a production basis this year. Others will no doubt begin trying herbicides and flame or concentrate on more thorough use of mechanical control measures such as the rotary hoe, cross-cultivation, and high-speed sweeps.

Needless to say, the war on insects will be hot. It is likely that more self-propelled high-clearance sprayers will be used in 1956 than ever before. They have some disadvantages when compared to aerial application,, but many farmers prefer to make their own application with their own equipment. Ground sprayers give thorough coverage in small as well as large fields, and they can also be utilized for applying defoliants.

The emphasis in machine harvesting will again be on quality this year. Research has shown that proper crop preparation from land selection to defoliation, proper machine care and operation, and good ginning can turn out a quality product at reduced costs. A large-scale educational program to preserve quality was begun last year and will be continued this year. Increased research and education in all the techniques of efficient production would mean much to the individual producer and to the future of the cotton industry as well.



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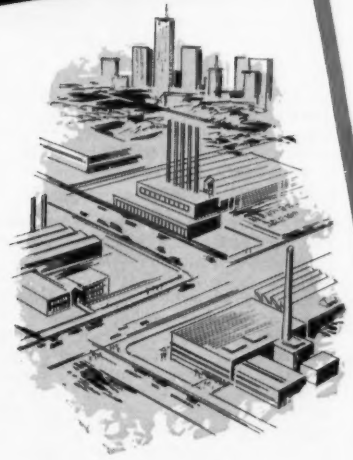

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Weed Control

(Continued from Page 27)

that a farmer can now treat twice as much acreage with one tank of the spray mix and with substantial savings in loading time and the hauling of water to the field.

Numerous herbicides have been tested as pre-emergence treatments for cotton. Currently, the most promising ones are isopropyl N-3-(chlorophenyl) carbamate (CIPC) [2] and the substitute urea compounds, 3-(3,4-dichlorophenyl) 1,1-dimethyl-urea (diuron) [3] and 3-p-(chlorophenyl) 1,1-dimethylurea (monuron) [4]. The CIPC has been used rather widely with good success during the last three years.

CIPC. CIPC markedly inhibits crab grass and other annual grasses and cotton has a relatively high tolerance to the compound. Because crab grass is probably the most important weed in cotton, much work has been done to determine the practiceability of using CIPC as a herbicide for cotton. Estimated cotton acreages treated with CIPC are as follows: 1951, 16,000; 1952, 60,000; 1953, 180,000; 1954, 150,000 and 1955, 121,000.

Although cotton has considerable tolerance to CIPC, it is not great enough to permit the indiscriminate usage of CIPC on cotton under all conditions. The dosages to be employed on all soils are influenced by the general characteristics of the soil. Some rainfall within 7 to 10 days after application is needed to attain best results with this as well as other pre-emergence herbicides.

Under the humid and warm conditions of the South, the amount of CIPC remaining in the soil after use to control weeds in cotton does not present a hazard to succeeding crops. The too-rapid loss of the material under high temperature and low soil moisture conditions is sometimes disadvantageous because its herbicidal effectiveness is correspondingly reduced.

Increases in the use of CIPC are expected but marked changes will likely be determined by cost and availability of labor and whether or not farmer experience clearly demonstrates more dollars per acre can be realized by its use.

Urea Herbicides. The herbicide monuron presents problems in usage because crop injury occurs on some soils at rates considered optimum for controlling weeds and uniform spraying of the wettable power formulation from conventional spray rigs has caused difficulties. Moreover, overdosage in application is hazardous to cotton. Because of these and other disadvantages monuron has not been marketed as a pre-emergence herbicide for cotton.

Evidence has been accumulated to indicate that diuron is slightly safer to use on cotton than monuron. Not unlike monuron, however, the range in diuron dosage to obtain weed control and avoid crop injury is narrow. Therefore, farmers who wish to use diuron on cotton should exercise proper care to insure application of correct dosage per acre.

In 1955 there were no state recommendations for the use of diuron on cotton but it is estimated that 65,000 acres were treated in the Southeastern States under a program in which industry personnel gave some degree of supervision of the applications. In general the results were good. Insufficient data have been obtained on the possible residual effects of using annually the substituted urea herbicides on cropland for a period of several years and under a wide variety of soil and climatic conditions. However, studies conducted thus far indicate that the amount of diuron remaining in the soil after a single pre-emergence band treatment does not present any significant hazard to succeeding crops. Broadcast treatments of cotton with diuron appear to present some hazards to succeeding crops and should not be made on large acreages until more information is available on residues in different soils.

Intensive studies on residues from the urea herbicides and other new weed control agents need to be expanded in the future. Should experiment stations generally recommend band applications of the urea herbicides the potential scope of their use will likely be governed by those same factors already mentioned for CIPC, i.e., the extensiveness of the actual need for pre-emergence weed control chemicals and whether farmers are convinced more dollars can be realized from their use.

• **Post-Emergence Treatments** — Oils and Flame.—Post-emergence oils and flaming have been available to farmers for several years but they have not achieved the popularity of other weed control practices. The directional application of herbicidal oils to cotton is such a precision operation that the acreage treated with oils has not expanded above 125,000 to 150,000 acres. Equipment must be calibrated and adjusted accurately to insure control of weeds without damage to the crop. Uniformity and smoothness of seedbeds are essential prerequisites to good jobs of oil application. Timing of oil applications to coincide with susceptible stages of weedy growth is necessary and the weeds must be small or the oils fail to control them. A serious limitation in the use of oils alone to control weeds is the occurrence of rainy days that prevent field operations so that weeds grow too large before treatments can be made. One important advantage of oil treatments is that they can be applied when the farmer sees a weed problem is going to develop. Farmers who have mastered the technique of applying oils have been pleased with the dollar savings realized.

The future use of oils is expected to level off at about the present acreage unless acreage allotments are expanded. In a given season usage can be expected to increase should widespread early season weed problems occur. If more satisfactory post-emergence herbicides are developed oiling of cotton can be expected to decrease markedly. Flaming of cotton is expected to increase in the irrigated cotton of the West but continue at about the same level in rain-grown cotton.

Residual-type post-emergence herbicides are needed. With the advent of the spindle type mechanical picker new weed control problems have been recognized. Machine picked cotton with grass trash has a lower grade and income loss is often as great as the out-of-pocket expense for early weed control. Grass is impractical to remove in the ginning process. In the late stages of growth when hoeing is tedious the only practical solution at the present time is flame cultivation.

There is need for suitable herbicides to extend the pre-emergence weed control until harvest, particularly where supplemental irrigation is practiced. Considerable work is in progress to employ residual-type post - emergence substances instead of oils to control weeds with a view to reducing the number of applications required with oils and to extend weed control until harvest. The new urea herbicides applied broadcast as layby treatments are showing promise for controlling late season weeds, such as annual morning-glory and annual grasses in the irrigated cotton of the West, but some hazard to succeeding crops is being encountered. For example, current information indicates that wheat and barley cannot be planted following cotton treated with the urea herbicides but grain sorghum and cotton show no deleterious effects.

Intensification is being made to search for better selective post - emergence chemical agents capable of killing weeds when the need actually exists and to provide residual control of ungerminated weeds until harvest. If suitable post-emergence materials are developed which are easy to apply when the need for control of annual weeds is evident, there is reason to believe they will find widespread usage. Research to develop procedures for controlling vines and other perennial weeds in cotton fields needs strengthening.

• **Pre-Planting and Spot Treatment** — The new herbicide sodium 2,2-dichloropropionate (dalapon) has given good control of young vigorously growing Johnson grass when used for spot treatment of clumps of the grass in cultivated fields. The material may injure the cotton around the treated clump but probably no more than hand hoeing. It does not appear to present any significant soil residue problem as regards succeeding crops. This herbicide has also shown promise for controlling Johnson grass when sprayed on the growing grass at dosages of 8 and 12 pounds per acre about two to three weeks prior to planting cotton. More intensive evaluation of dalapon for pre-planting control of Johnson grass will be made during 1956. In the future this herbicide will likely find a real use on cotton lands infested with Johnson grass, including those of the Western U.S.

• **Economics of Weed Control Practices** —In the final analysis broad usages of new production practices hinge on the efficiency and economic benefits derived

(Continued on Page 66)

Ginners Can't Wear Out Rug—It's Cotton

■ A COTTON RUG has been trampled by thousands of feet —including some big ones—for three years in a row at the annual conventions of Texas Cotton Ginners' Association and it still looks almost new. The rug, 27 x 33 feet, may be the largest ever made of cotton. It was made especially for the Brazos Valley Cotton Oil Co. of Waco, and is used in that firm's large exhibit in the center of the exhibit building — where it gets lots of traffic from those attending the convention. Cotton also was used extensively in decorations of many other exhibits at the convention hall arranged by John P. Bounds and Son.

Progress Brings Problems In Mechanical Picking

Gin operators find they have to keep pace in technical know-how with the cotton industry's progress, as well as in equipment, if they expect to maintain high quality processing.

By J. M. RAGSDALE
Marketing and Ginning Specialist,
Extension Service,
University of Missouri

MACHINE-PICKED cotton (center) can be as high quality as hand picked (left), or it can be distinctly low quality (right). The stems shown were taken from a sample from a machine picked field that was undefoliated.

MISSOURI cotton growers continued their spectacular shift from hand to machine picking in 1955. By the end of the picking season, they figured 33 percent had been mechanically picked. This compares with only one percent five years earlier.

That's big progress. But along with the rapid switch to machinery went some problems. Gin equipment and trained operators had to keep pace. It wasn't always a question between profit and loss. Many times, it meant the difference between a valuable crop and one which wouldn't sell.

Reaction by producers and ginners was true to Southeast Missouri traditions. New equipment and extensive training of operators showed 90 percent of the local gins with adequate cleaning and drying equipment which kept them abreast or ahead of the increase in harvesting machines.

• **Had Picker Problem**—The other problem, trained operators and service on mechanical pickers was handled in like fashion. Dealers, gin operators and producers cooperated with county agents in training sessions to do a better job during harvest.

To get an idea of the scope of this problem, let's look at the following climb in machine picking: 1951—1 percent; '52—six percent; '53—14 percent; '54—23 percent; and '55—33 percent. This number of machines concentrated in a six-county area represents a high degree of mechanization. The number of spindle machines increased from about 900 in 1954 to more than 1,300 during 1955.

We had a problem. Mushrooming numbers of mechanical pickers in many cases outdistanced the experience and abilities of dealers to adjust and service them. And it proved practically impossible to train operators fast enough to run them.

To help with this growing problem, mechanical picker operator schools have been held in Missouri for several years. These were enlarged in 1955 and a more intensified coordinated program on quality harvesting with mechanical pickers carried out. Helping with the program were owners of pickers, cotton ginners, farm machinery dealers and others interested in improving quality through better harvesting. Assisting in the program were the manufacturers of spindle type pickers, the Arkansas-Missouri Ginners' Association, federal and state gin specialists and the National Cotton Council.

Most of the machinery dealers and about half the owners of mechanical pickers discussed the importance of proper harvesting for quality maintenance at area meetings in August. These were followed by dealer-customer schools in all parts of the cotton area. According to county agents reports, about half of the picker operators received training at these schools.

• **1955 Season Different** — The growing season in 1955 required different preharvest practices than 1954. Rainfall was practically non-existent during July, August and September in 1954. As a result, most of the leaves dropped off the plant. In many cases, successful machine harvesting was possible without defoliation. The few leaves remaining on the plants were dry and did very little staining during the harvesting and ginning process.

Remembering this experience, several growers attempted to use mechanical pickers in lush growth of cotton during the latter part of September in 1955. The result was excessive green leaf, resulting in severe staining, and enough sticks and grass to cause the samples to be classed as "bark," "stems" and "grassy."

Ginners, who buy 94 percent of the Missouri crop, refused to buy this low grade cotton because they could not find a ready market for it. Attempts were then made to put this cotton into the government loan, but the words "grassy" and "sticks" made such cotton ineligible. Therefore, the grower who followed poor harvesting practices found himself in the uneviable position of having a product that nobody wanted or would buy at any price. Successful defoliation thus becomes an absolute necessity for good machine harvesting.

The results were conclusive and immediate. Realizing that it was too early to defoliate and finding no market for low grade cotton, Missouri growers, almost to a man, pulled their machines out of the cotton fields. Then, for a period of about three weeks, it was almost impossible to find a mechanical picker operating in the Missouri Delta. During the remainder of the season, defoliation was the rule instead of the exception and some very good quality cotton came out of mechanical pickers. In some cases, it was difficult to observe any difference betwen machine picked and hand picked cottons, after they had been ginned.

It is difficult to accurately assess the value of the harvesting program at this time. However, one county agent re-

(Continued on Page 66)

J. M. RAGSDALE

Cottonseed Products

(Continued from Page 54)

in the vegetable oil market is likely to prevail through the balance of the current crop year. USDA estimates stocks of edible fats and oils at the close of this season at 250 million pounds less than a year earlier. Very few, however, care to hazard a prediction with respect to the 1956 crop year. The general farm bill could sharply reduce the 1956 crop of cottonseed oil. On the other hand, the further reduction in acreage allotments for basic crops, coupled with an increase in the support price and no acreage control on soybeans, has led to talk of a 1956 soybean crop approaching 500 million bushels. While such an estimate may be overly optimistic, soybean producer representatives regarded the possibility seriously enough to oppose the increase in support prices on the ground that it could stimulate production more rapidly than markets could be developed. At the moment, it appears likely that any decrease in the output of cottonseed oil from the 1956 crop will be more than offset by an increase in soybean oil production.

Despite the stepped-up export demand for edible fats and oils, USDA has been under pressure throughout the current season to embark upon a program of direct purchases of cottonseed and soybean oils. The program was first proposed as a means of making 1955 support prices on cottonseed and soybeans effective. While the bulk of these crops has long since moved out of the hands of producers at prices above support levels, the oil purchase program is still being urged upon the Department. The proposal lost some of its support when one of its principal proponents announced that "It is a double-edged weapon, tending to increase the price of beans (soybeans) and decrease the price of meal." The oil purchase program is far from dead, however, and a softening of the oil market in an election year might bring to it more support than it has had to date.

If government must be active in the fats and oils market, it would seem preferable that such activity be conducted along the lines of the P. L. 480 program rather than by direct oil purchases. The former has been carried out entirely through regular trade channels; the latter would be a direct government operation. Past experience with both types of programs has demonstrated that the former operates more smoothly and more satisfactorily with less adverse effects upon all branches of the industry.

There is one factor that is ever-present so long as government is active in the market. That is the nature and timing of changes in government policy. The cottonseed industry has experienced many such changes during the several years when CCC was buying cottonseed products. The same type of changes occurred this season in the sale of CCC linters stocks. There is no way that the individual trading in oils and fats can anticipate the effects of such changes. He therefore tends to hold commitments to a minimum so that a sudden shift in policy by a political agency may not cause him a substantial loss.

The current season is unusual in that it is the first time since 1950 that a considerable volume of cottonseed oil has not moved from the mills into government stocks. Freed of the restrictions inherent in the "package" program, cottonseed oil has once again demonstrated that, when priced competitively, it can hold its own in both domestic and foreign markets.

• **Feed Products** — Primary factors affecting the outlook for cottonseed meal are current stocks and probable production of protein concentrates; total supply of all feed concentrates; exports of oilseeds, protein meals, and grains; the livesock population and price situation; development of new markets for cottonseed meal through research; and the vigor with which the cottonseed crushing industry conducts merchandising and educational programs.

Conditions within the cattle industry are important in this consideration because it has been the principal market for cottonseed meal during the past quarter of a century and continues to be the main outlet. Its suitability for use in cattle production and the aggressiveness of the cottonseed crushing industry in dveloping this market have caused cottonseed meal to be the first choice of protein supplements used by cattlemen. Results of a recent scientifically designed survey conducted by Washington State College and The American National Cattlemen's Association indicate more cattlemen feed cottonseed meal than the total of the next four major supplements. The number using cottonseed meal was 77.8 percent more than those using its nearest competitor. These facts demonstrate the value of past efforts to capture and hold this valuable market and emphasize the need to maintain and strengthen them. The possibilities for further development are clear when we consider that 21 percent of the cattlemen reported they do not use any type of protein supplement.

The livestock population and price situation exerts a strong influence on protein demand and price. On Jan. 1, 1956 the cattle population had reached a record high of 97.5 million. Hog numbers are about nine percent higher than a year earlier and the sheep population has about leveled off steady. Increased livestock numbers would indicate a higher domestic demand for feedstuffs, including protein. During the first quarter of this production year, three percent more commercial by-product feedstuffs were consumed than during the same period a year earlier, reflecting the demands of increased livestock numbers.

However, during this three-month period 56.6 pounds of feed were fed per head as compared to 58.9 pounds during the same period for the 1949-53 average. Consumption of oilseed meals during this quarter was the smallest since 1950, with the exception of last season. Production of oilseed meals during the quarter, less exports, netted 190,000 tons more than last season. As livestock prices decline there is some tendency for feeders to reduce the rate of protein feeding, especially when home-grown grain and roughage are more liberally available. The meat animal price index on Feb. 15, 1956, was 18.6 percent below that of the same date a year earlier. Most of this decline is accounted for by lower hog prices, but the average cost of feeder and stocker steers during the first two months of 1956 was down about 16 percent from prices a year earlier. While good feeding practices are based on scientifically calculated balanced rations, the decisions of feeders may be affected by the psychological urge to reduce all expenses in an effort to relieve financial stress.

Total feed supplies have increased more rapidly than even the record livestock population. The supply of concentrate feeds per animal unit is 10 percent larger than the 1949-53 average and five percent above last year. Carryover of feed concentrates into the 1956-57 season is expected to be five million tons higher than the carry-over into this season. This increase is more significant in cotton-growing areas because much of the improvement in crop yields occurred in the South. All feed concentrates are competitive to some extent. Availability of liberal supplies of grain in local areas may cause local livestock producers to depend more than usual on grain to satisfy feed requirements and purchase less protein concentrates. On the other hand, more liberal supplies of grain may tend to promote livestock fattening enterprises in which protein concentrates will be used to balance the ration.

Larger supplies of protein concentrates have a direct influence on cottonseed meal outlook. Oilseed meal production in 1955-56 is up eight to 10 percent over last season. However, the amount available for feeding will be less than this increase because of more exports. The Jan. 1, 1956, soybean stocks of 274 million bushels are the largest on record—14 million more than a year earlier and 64 million more than the 1949-53 average. Even after heavier exports, soybean meal has exerted heavy pressure on cottonseed meal during the current season. Should next season produce a soybean crop approaching 500 million bushels, this pressure on cottonseed meal prices would increase significantly.

Cottonseed meal research offers the opportunity to increase its use in rations fed poultry and swine. Seventy

Will Address Crushers

DR. WILLIAM H. ALEXANDER is a widely-known inspirational speaker who will be featured on the program of the convention of Texas Cottonseed Crushers' Association at the Statler Hilton Hotel in Dallas, June 10-12. Jack Whetstone, secretary-treasurer, says that the program will have many other features that will be enjoyed by crushers and their wives.

percent of all manufactured formula feeds are for poultry and swine. The tonnage manufactured in 1955 totaled 23.6 million tons. Such feeds may contain from 10 to 40 percent of vegeable protein meal, offering a premium market for those meals used. Research conducted during recent years has made it possible for cottonseed meal to be used in these formulas in significant amounts for the first time through reduction in free gossypol content, improvement of cottonseed protein availability for these animals, and better understanding of protein requirements.

However, further research is necessary to win for cottonseed meal a steady place of importance in rations fed simple stomach animals. The fiber content of cottonsed meal may prove to be a limiting factor in its use in poultry and swine feeds as gossypol and protein quality restrictions are removed. The soybean processing industry appears to be making major shifts to 50 percent protein meal containing only three percent fiber. Feed mixers using this meal will be less likely to be attracted to cottonseed meal with 41 percent protein and 12 to 14 percent fiber unless a solution is obtained through research. It is very likely that additional research on the relationship of gossypol to protein quality in cottonseed meal will significantly increase the value of cottonseed meal protein for non-ruminant animals. Further research with gossypol and other cottonseed pigments is necessary for cottonseed meal to be used in maximum amounts in swine rations and to be recommended in any amount in feeds for laying hens.

Prices of cottonseed hulls have been sharply lower in most areas this season, primarily because the 1955 pasture, roughage, and grain production in Southern States improved over the 1954 season. In many mill areas hulls are a standard part of cattle fattening rations in commercial feedlots and are in steady demand unless their relative price is out of line with other roughages. Development of cattle feeding enterprises in other mill areas would provide a steadying influence on cottonseed hull prices which are usually subject to wide fluctuation according to local feed conditions. Drouth experiences of recent years appear to be causing many farm livestock producers to place increased emphasis on developing reserves of silage and hay which may reduce a part of the extreme demand for hulls during seasons of low pasture and roughage production.

• **Linters** — Consumption of linters during the first half of the 1955-56 season has been at the highest rate on record. This has been true in both chemical and non-chemical markets. The current crop has moved from the oil mills about as rapidly as produced. In addition, CCC has sold the surprising total of 854,524 bales of linters from its stocks acquired in supporting the price of cottonseed during the preceding four years.

A significant part of this record demand for linters, in both chemical and non-chemical markets, has originated in the automotive industry. After several years of losing ground, cotton linter pulp has made a strong comeback in tire cord. Interestingly, this has been brought about as a result of the introduction of nylon into tire cord. The use of nylon stimulated improvements in rayon cord aimed at placing the latter in a better competitive position. Linter pulp was found to have certain advantages in the processes used to produce the improved rayon cord. As a result of this combination of circumstances, the quantity of linters consumed in tire cord has increased substantially—to a much greater degree than the increase in tire cord production.

In non-chemical markets, the consumption of linters has also been large. Automobile production at a near-record level and a strong market for mattresses and upholstered furniture have been largely responsible.

A basic factor in the rise in consumption has been the fact that this season, for the first time in five years, linters have been selling in a free market and have therefore been priced competitively. In non-chemical markets, linters have been priced attractively relative to cotton waste—even imported waste. For chemical purposes, linters prices have been such that the bleachers have been able to compete on a price basis with the producers of wood pulp. In addition, a substantial volume of second cut linters has moved into export.

The high level of consumption this season cannot, of course, be interpreted to mean that linters' problems have all been solved. This is far from the case.

The quality of 1955 crop linters was generally good because of an unusually fine harvest season (the Southeast excepted). But many future harvest seasons will not be so favorable. Changes in seed varieties and processing methods and the shift from hand to mechanical harvesting have all contributed to the problem of quality control. Buyers of both chemical and non-chemical linters emphasize the need for quality improvement. Producers of wood pulp, it is pointed out, are making a special effort to improve their product so as to recapture a greater share of the tire cord business.

This problem of quality improvement is the responsibility of cotton producers, cotton ginners and cottonseed crushers. Each must recognize that failure to meet his part of the responsibility can quickly cost linters a part of their market and can penalize all groups financially.

The matter of price is one which it is neither practicable nor legal for the affected groups to control. The wide variation in the prices of agricultural commodities and their products — due largely to changes in the volume of production—has traditionally been a market handicap. When, to the variation due to natural causes, there is added the control of acreage and price by political agencies the handicap is even greater. As this is written, there is pending in Congress legislation that could drastically reduce the production of 1956 linters. Under the circumstances, it is not surprising that users of linters are seriously concerned about supplies and are making every effort to develop sources of alternative materials.

Events of the past season have demonstrated that there is available a strong market for linters of good quality at a competitive price. After several years of seeing linters accumulate in CCC storage, the experience of the present season should have a significant impression upon members of the industry.

• Continental Promotes Bickers and Pratt

PROMOTION of Kenneth D. Bickers from assistant sales manager of the Atlantic district office of Continental Gin Co. to manager of the company's export department and appointment of Daniel Pratt as assistant sales manager of this department have been announced by Merrill E. Pratt, president. Both appointments were effective April 1.

KENNETH B. BICKERS

Bickers joined the Continental Gin Co. in 1935 as a gin machinery salesman in the company's Atlanta district office immediately following his graduation from Georgia Tech. In 1938 he was transferred to the company's Memphis district office. He returned to Atlanta as assistant sales manager of that office in 1948. He has moved to Birmingham to assume his new duties.

DANIEL PRATT

Daniel Pratt entered the employment of Continental in 1946 following his service in the U.S. Army after graduating from the University of Alabama in 1943. He served in the Memphis district office from 1950 to 1953 when he returned to Birmingham with the company's export department.

Mechanical Picking

(Continued from Page 63)

ported that cotton producers in his county had an extra $1,500,000 income as a result of improving harvesting and ginning practices. We are confident that when the final figures are available, Missouri will have in 1955 maintained or increased slightly the grade over 1954. This happened in a year when the average grade showed a decline in the Cotton Belt. The program has created "quality awareness" among producers, machinery people, and ginners and will be given greater emphasis in 1956.

• **Gins Well Equipped** — Cotton gin machinery is already keeping pace with the increase in mechanical pickers, with some 90 percent now having adequate equipment. More than two-thirds of the cotton gin operators in Missouri have been to at least one of the factory schools for operators during the past three years. Most of the new machinery going into the 168 gins in the state is for the purpose of enlarging capacity rather than additional machines for cleaning or drying.

Opinions of most ginners point to a time in the not too distant future when 80 percent of the Missouri crop will be harvested and ginned during the month of October with the remainder equally divided between September and November, and the harvest completed by the end of November. This thinking is reflected in gin remodeling because many gins that were completely modernized as late as 1954 are now being enlarged to increase capacity.

With well-equipped gins and trained operators, more of the responsibility for grade and quality maintenance shifts back to the producer. This is not to say that all gins are properly equipped and all gin operators are well trained in operating the complex gin machinery required in present day plants. However, gin equipment and gin operation have progressed much faster than harvesting practices.

Manufacturers of cotton gin machinery placed on the market, or field tested during the 1955 season, several types of stick and green leaf removal machines. Other manufacturers are making changes in existing machines to do the same job. These machines or adaptations of them will probably become efficient in removing foreign material which heretofore could not be separated from lint cotton, and perhaps two or more of these machines will be located at various places in the ginning process.

However efficient gin machinery may become, the need for quality harvesting will always be with us. There is simply no need to take foreign material and moisture to the gin if it can be left in the field. Even if its presence caused no actual damage to the fiber, its removal at the gin will be more expensive than if done in the field.

Quality harvesting and ginning are particularly needed right now—in 1956 and in the immediate future. During this period of lower farm income and rising production costs, a few extra dollars are important to cotton growers. Quality harvesting can provide these extra dollars. The extra dollars provided by quality harvesting can be "net" dollars because many of our good harvesting practices cost little or nothing to use. By following the recommended practices in harvesting and ginning, the cotton industry can maintain top grades, produce quality cotton, reduce production costs, and increase profits to growers. All of these things are necessary if cotton is to maintain its competitive position in the fiber market.

Weed Control

(Continued from Page 62)

from them. Because weed control may account for up to 90 percent of the total pre-harvest labor requirements to produce cotton in the humid Southeastern U.S. and is a limiting factor in producing irrigated cotton, the opportunities for improving the economics of production are tremendous. The earliest work with herbicides promised advantages in increasing efficiency of weed control procedures over conventional practices. This has been borne out in research studies and farmer experience over a period of five to six years. With good consistency, pre-emergence herbicidal treatments across the Southeastern U.S. have reduced strikingly the hand labor requirements without significant influence on yield.

The immediate economic advantages from use of different combinations of weed control practices are not always as clear-cut as the labor saving aspects. The dollar return from using herbicides appears to be related directly to the severity of the weed infestation occurring in a given season. The lack of a generally heavy weed infestation since 1951 in the Midsouth is believed to be one of the chief factors contributing to lack of more widespread use of chemical weed control in cotton.

Other equally important factors were reduced acreage allotments, availability of adequate labor on farms and plantations, high out-of-pocket expenditures for herbicides and application equipment, and fear cotton might have to be replanted because of adverse weather. Many farmers are convinced that proper use of chemical will reduce hoe labor requirements but they are not completely satisfied that the labor reduction will offset the costs of herbicides and their application. Work done by the Mississippi Experiment Stations during 1954 and 1955 supports in part the farmer reactions.

McWhorter and Wooten, working at Stoneville, Miss., found that pre-emergence herbicidal treatment when the weed infestation was light could be slightly unprofitable as compared to conventional hand hoeing. The value of the pre-emergence treatment as insurance in cases of extended rainy weather is difficult to evaluate in dollars and cents but unquestionably it is very important. It could prevent loss of the crop. Present indications are that if moderate to severe weed infestations occur following planting, pre-emergence treatments result in cash savings of $2 to $10 per acre.

Post-emergence applications of herbicidal oils have given greater dollar return per dollar invested than any other weed control practice. McWhorter and Wooten have pointed out that this is understandable because oils are not applied until the need is evident. Should current research result in post-emergence weed control materials and methods which have the desirable features of herbicidal oils but lack the undesirable characteristics, they would be widely accepted because they could be used when the need occurred and the economic value would be apparent to the grower beforehand.

Studies made at the Delta Branch Experiment Station have shown that cross-plowing of cotton should be considered as weed control insurance just the same as pre-emergence treatments. Where weed infestations are light, production costs with cross-plowing are slightly higher than those of conventional cultivation. The higher costs are due to the need for more planting seed and at least one additional cultivation where cross-plowing is done. If weed infestations are moderate to severe, cross-plowing either with or without a pre-emergence herbicide or post-emergence oiling, results in about a 40 percent reduction in hoe labor with attendant lower weed control costs.

If complete mechanization of cotton production is to be sought, it appears that combinations of pre- and post-emergence treatments will be required. McWhorter and Wooten found that in 1954 when the weed infestation was light the use of post-emergence oils and flaming reduced labor requirements from 20.4 hours per acre for conventional hoeing to 5.8 hours for the chemical treatments and weed control costs were reduced from $10.65 per acre to $7.68, respectively. In 1955, when the weed infestation was higher, they found that combinations of pre-emergence treatment with CIPC followed by oilings and flamings as needed reduced the weed control labor requirements from 41.6 hours per acre for conventional hoeing practice to 6.6 hours for the chemical treatments and the costs from $17.99 to $12.65 per acre, respectively. At Holly Springs, Miss., in 1955 the usage of CIPC as a pre-emergence herbicide reduced hoe labor from 82.6 hours to 16.6 hours per acre with cash savings of about $26 per acre.

Future Prospects

The number of important unsolved problems confronting weed research men is large and impressive. Weather factors, especially temperature and rainfall, and soil factors present challenging problems that demand careful study as they relate to each promising herbicide. Equally important are the requirements for intensifying studies on the mechanisms of herbicidal actions, the life cycles of weeds, and the ecological and physiological problems created by herbicidal usage. It is apparent that the need is acute for more properly trained persons to conduct productive research in the rapidly expanding field of chemical weed control.

Research men in both public and private agencies are challenged with problems of improving further the present weed control measures and developing newer procedures that are increasingly attractive from the economic standpoint. Increased public and private support of weed control research is expected in the future because more efficient control of weeds will decrease crop production costs materially with attendant higher returns to the farmers, lower costs to consumers at home, and at more competitive prices abroad.

Present guides offered by Experiment Stations in the Southeast on use of chemicals to control weeds in cotton should be evaluated carefully by individual growers in planning their 1956 crop because present herbicides have a real place on many farms, particularly where labor availability is critical.

Quotes

Because the ginning industry had the courage to act—rather than to wait—1956 finds it better prepared than ever to render quality service to the cotton farmers of America.—A. M. Pendleton.

From Our Authors

Cotton Manufacturers Meet, Elect Grier President

Approximately 1,000 members and guests of the American Cotton Manufacturers' Association attended the annual convention April 5-7 at the Hollywood Beach Hotel, Hollywood, Fla.

F. E. Grier of Greenwood, S.C., first vice-president, was scheduled to become president, succeeding A. K. Winget of Albemarle, N.C. The election of officers was scheduled for the final session Saturday morning, April 7, which was to have Senator H. Style Bridges and Robert C. Jackson, ACMI executive vice-president, as the principal speakers.

Dallas Plant Will Observe Thirty-Fifth Anniversary

The thirty-fifth anniversary of the Dallas factory of Procter & Gamble will be observed April 26 with a birthday luncheon for all employees and a dinner for business and civic leaders in the Statler Hilton Hotel.

Ricahrd R. Deupree, chairman of the board for the company, will be main speaker at both events, J. T. McKinnon, factory superintendent, said.

Other P&G executives from the company's Cincinnati headquarters will attend. Aboue 300 business, industrial, civic and governmental leaders of the city are expected to be present.

Breeder's Role

(Continued from Page 16)

for quality improvement involves many things. The starting point necessarily must be an analysis of what textile consumers actually want. We must have a precise knowledge of their preferences for various fabric qualities—such qaulities as wrinkle-resistance, luster, drape, and the like.

We've made a lot of progress on this. But remember, it's just the first part of the job. And certainly it's not the hardest.

The really difficult part lies in figuring out just what properties in the *raw fiber* will produce the *fabric qualities* desired by consumers in finished goods.

A lot of things happen to the cotton fiber between the time it hits the mill door and the time it emerges on the retail counter or the dress rack in a store.

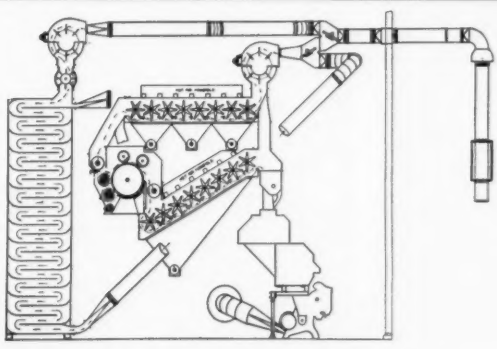
The raw fiber, as it enters the mill, may posesses to a large degree a certain proprety that we believe will improve the end-product. But by the time the raw fiber is converted into yarn, the property in question may not show up very well at all. And by the time the yarn is woven into a fabric, the raw fiber property may, for all practical purposes, have disappeared.

Developing breeding guides is a complicated job, but a lot of hard work is being put into it because the potential gains for cotton are tremendous.

For example, what would be the result if we could breed for decidedly better wrinkle-resistance in cotton fabrics? If we could do this—either in the sense of making the fiber itself more wrinkle-resistant, or in making the fiber more adaptable for chemical finishing to accomplish the same thing—it could be the key to potential markets equivalent to about a million bales of cotton. These are markets in which cotton is not now competitive, largely because our fiber doesn't produce enough wrinkle-resistance in some end-use products.

It's a big potential opportunity, but we immediately run up against the question, "What properties in raw cotton would contribute to wrinkle-resistance in the fabric?"

Answering that question—and many others like it—is essential if we hope to exploit anything like the full potential of breeding for helping cotton meet today's needs in the market place.



Note the hot air on the cleaners is blown through the cotton by a series of nozzles (similar to the air blast nozzles on a gin stand), forcing the dirt, leaf trash and stems through the screen. Cleaners made in any number of cylinders to meet local conditions.

STACY Cotton Drying, Cleaning and Extracting System

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Proper Defoliation

(Continued from Page 30)

insects, such as leaf worm, boll weevils and bollworms.

Defoliation is still a major problem in any cotton mechanization program in the Cotton Belt. Defoliation that is good enough for mechanical picking can be obtained with a number of materials. However, the growth habit of plants in putting on a second growth of leaves reduces the effectiveness of all known defoliants. The ideal defoliant would be a material which would remove all leaves and inhibit all secondary growth.

It has been, and still is, one of the big problems of the cotton producer to know which type of chemical to use. There are some factors to be taken into consideration which will help decide the selection of a chemical. The true defoliants are usually used on cotton plants that are large, high-yielding and the bolls set over a long period of time. If a desiccator were used on this type of cotton, the quick killing of the plant would probably damage the staple in some of the bolls that were not mature. This is the type of cotton that is machine picked or hand picked, as it is too large to harvest with the strippers. It is not necessary for all the leaves to be off of the stalks for harvesting with a spindle type picker. If 75 to 80 percent of the leaves are dropped, the cotton is in good condition for machine picking.

Desiccators are usually used on the small, low growing and determinate stormproof or semi-stormproof cottons. The bolls mature about the same time and will open about the same time. For this reason the quick killing does not hurt the staple of the cotton and permits stripper harvesting of all of the cotton at one time. A true defoliant can be used on this type of cotton without injury to staple or yield; but before the cotton can be stripper harvested, it is necessary to apply a desiccator to kill the re-growth and old leaves that the defoliant left. It is necessary to kill all of the green leaves on the cotton plant to keep from lowering the grade of the cotton. Lint that has green leaf stain on it will be penalized from two to five cents per pound.

• **Stripper Harvesting** — The cotton producer has another big question to answer, "Will it pay?" Research data support the assumption that it does pay to mechanically harvest cotton. The data show for stripper harvesting that pre-harvest chemicals are essential and will pay in terms of reduced harvest cost, timing and efficiency of harvest, and improvement in grade. The saving to the producer runs from $15 to $30 per bale. The savings depend on the pre-harvest chemicals used, cotton yields, and number of the chemicals. However, in some areas because of climatic conditions, defoliants or desiccators cannot be economically used. For example, on the High Plains of Texas growers worry about early frosts that shorten the growing season. The data from the Lubbock Experiment Station show that only in one year out of three would it be economical to use pre-harvest chemicals or to strip cotton before frost.

Research data show that stripper harvesting of cotton does not materially affect grade, staple, or loss in the field, when compared to hand pulling. The field loss in most cases is not as great when strippers are used if stormproof or semi-stormproof varieties of cotton are grown. Ninety-five to 98 percent of the cotton will be sold if the cotton is planted in the correct row widths for the efficient operation of the strippers.

This type of harvest gets the crop out early and the stalks can be destroyed early, which helps in controlling insects, such as pink bollworm and boll weevil. This is a definite advantage over hand or machine picking.

• **Machine Picking** —The advent and development of the mechanical cotton picker makes it possible practically to eliminate the use of hand labor in picking cotton. Research data show that it takes about 2.5 hours to pick an acre of cotton. This represents a saving of about 50 man hours per acre and constitutes a reduction of about 58 percent in total man hours required to produce and harvest an acre of cotton. From 90 to 98 percent of the cotton can be saved with machine picking if an open boll type cotton is planted. This will lower the cost of harvesting by one-third, or from $15 to $30 per bale, from hand picking. In order to make these savings, several things have to be taken into consideration. Almost every operation during the season has an effect on the efficient operation of mechanical pickers. Plant populations, varieties, uniformity of spacing, grass and weed control, and heavy "dirting" of the plants all definitely play a part in efficient operation of mechanical pickers.

• **Defoliation Precaution** — Studies have shown that defoliants and desiccators will reduce quality of fiber and seed if applied before the bolls are mature. Desiccants usually cause greater damage than defoliants if applied too early. If desiccators are to be used it is best to wait until 90 percent of the bolls have opened. A true defoliant can be used when 75 to 80 percent of the bolls are open without injury to the quality of the cotton. Proper timing of the application is very essential for a successful defoliation or desiccation program. The data show that the criticisms made in previous years that pre-harvest chemicals lower grade, staple and other fiber properties cannot be substantiated if the proper application methods are used.

Seed properties are not affected by a defoliant or desiccator if applied at proper times and proper methods of application is used. Some indications are that producers using 2,4-D with the desiccators to keep down re-growth may hurt the germination of the seed. The 2,4-D does not hurt the seed if they are not to be used for planting seed. There were definite indications in 1955 that some of the seed from cotton treated with 2,4-D was damaged.

KEMGAS

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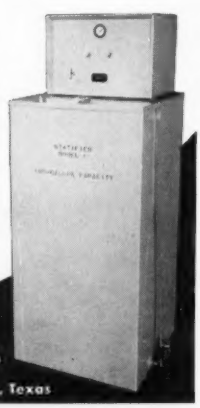

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Irrigation

(Continued from Page 55)

grown, the surface and under drainage, the climate, and the farmer who is to work the land. To be a successful irrigator, all the above factors must be considered.

In many areas the Soil Conservation Service is prepared to make a conservation survey taking into account all the factors which I have mentioned. The local County Agent will also help in the matter of crops and livestock and in making the transition from dry to irrigation farming. This may require careful adjustment of finances and some changes in the work schedule and even in family living.

There are four ways to apply irrigation water to the land. Mentioned in order of importance, they are:

1. The Furrow Method.—In this method water is supplied to furrows by gravity. The moisture enters the ground and soon reaches the plant roots.

2. The Flooding Method.—This is used mostly on close growing crops like pasture and hay. Water is spread over the land surface in thin sheets by gravity.

3. The Sprinkler Method.—In this system water is forced through pipes by a pump located near the source of supply. It is applied to the land by sprinkling like rain, either through revolving

Quotes

The boll weevil may get the biggest start in history in developing its attack on 1956 cotton.—H. G. Johnston.

From Our Authors

sprinkler heads or by fine streams coming through holes in the pipe.

4. Sub-irrigation Method.—This method is little used except under special conditions. Water is brought up from below through very porous sub-soils to the roots of the plants.

The furrow and flooding methods are used on fields which have fairly level topography or which can be made so by land preparation. These methods are used extensively through the Western States, but are gaining in popularity in the South, especially in the delta lands of Arkansas, Mississippi, and Louisiana. In my travels through the Southern and Eastern States, I have become convinced that these methods have a wider application in those regions than is generally thought. It should be noted that a field which has been well prepared for gravity irrigation is also well prepared for surface drainage by the same operation.

When gravity methods are used, it is necessary to have a good knowledge of the topography of the fields and of the soils. With modern earth moving machinery, the job of land leveling has been greatly simplified. Considerable cost is involved, often as much as $50 to $75 per acre. When the job is well done, however, a small amount of annual maintenance will assure an efficient and economical job of water application.

Before starting a job of land leveling, it is necessary to have a good survey made by competent technicians and then to employ a contractor familiar with irrigation work.

Much of the rolling and uneven land in the cotton-growing states can best be irrigated by sprinkler. Level land which has extremely high or extremely low rates of water intake should also be sprinkler irrigated.

I believe there are some rules which will prevent mistakes in buying a sprinkler system. It is not possible here to go into the intricacies of design, but there are some things which those unfamiliar with this type of irrigation should know. I shall attempt to clarify this statement by the following:

A sprinkler system should be designed for the particular conditions for which it is to be used. What will work successfully on one farm might not be right for the neighbor a mile away. The pump, the pipe sizes and arrangement, the type and size of sprinkler head, all have to be designed for the particular conditions in the field to be irrigated. The dealer or distributor who sells a package job without carefully designing it for the particular job is rendering poor service to the customer. Most dealers and distributors are conscientiously trying to do the best job possible.

Many farmers are inclined to buy on a basis of price alone. This is a grave mistake. It pays to find out whether the dealer who is far cheaper than anyone else is giving you good quality merchandise and whether it is being well designed for your particular needs. There are reputable dealers in most every community who have a good reputation for putting out successful systems. Go to them even if it costs more money, rather than buy from some "fly-by-night" concern which is here today and gone tomorrow, and which often does a poor job of design and may hand you an under-designed job to give the cheap price.

• **How Much Does Irrigation Cost?** — This question of cost is a difficult one to answer. Each system on each individual farm has its own cost which may be unlike any other. As has been said, the first cost of land leveling may run anywhere from $25 to $75 per acre and there will be an annual maintenance charge. The cost of applying the water by gravity methods will depend on how the system is designed and upon the skill of the individual irrigator. With modern design of gravity systems, the application cost is cheaper by far than by any other system which can be used.

First cost of sprinkler systems is from $45 per acre on large systems to $95 per acre or more on smaller ones. Here again, the first cost will depend upon local conditions. The cost of operation varies also, depending upon distance to water, amount of water used, operating hours per day, operating pressure, and other factors. Overhead costs —that is, interest and depreciation— vary from $6 to $18 per irrigated acre. Operating costs—including labor, fuel, and so forth—are often figured at $2 per acre-inch of water applied.

It should be noted that the cost per acre-inch of water applied will vary with the amount of water applied per season, when all costs are considered. Overhead costs continue at a uniform rate whether the system is used or not.

When a system is purchased for the irrigation of a special crop, like tobacco, it is well to experiment with other crops as well, if an adequate water supply is available. When the investment has been made in a system, it should be used as much as is profitable.

In visiting the Southern and Eastern States, I noted many locations where a cooperative irrigation system might be installed. In one instance, it seemed very feasible to install one pump on a river and, by means of a low pressure pipe line, serve five or six farms which otherwise would have had no water supply. This low pressure pipe line would lead from the pump at the river to an above ground reservoir located about a mile away. Each farm would take water from the low pressure line by means of a riser and then pump to higher pressures by means of their own individual pump and irrigation system. Costs could be apportioned, as is done with irrigation systems in the West.

I should like to stress this point: Irrigation of cotton or any other crop is not a cure-all or a guarantee of success. It is but one of the staves in the barrel of successful cropping. Along with irrigation will have to come high fertility levels, good insect and weed control, and above all, good management. It is true that good irrigation practices will usually assure a farmer of more uniform crop yields. He may often have good yields in time of drouth when his neighbors have little or nothing. A better family income is usually assured.

If the correct size of endless V-Belt is not readily available, or if you have to tear down machinery to install, then the best belt to use is open-end V-Belting fastened with

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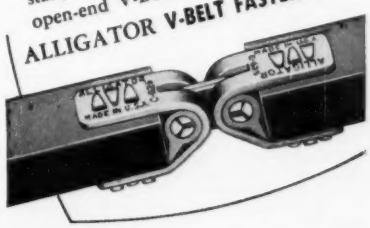

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Quotes

Quality harvesting and ginning are particularly needed right now—in 1956 and in the immediate future. During this period of lower farm income and rising production costs, a few extra dollars are important to cotton growers. Quality harvesting can provide these extra dollars. The extra dollars can be "net" dollars because many of our good harvesting practices cost little or nothing.—J. M. Ragsdale.

From Our Authors

• Texas Woman Ginner Subject of Article

MRS. H. P. DONIGAN, wife of a past president of Texas Cotton Ginners' Association and one of Texas' few women ginners, was the subject of a feature article in the Dallas Times Herald during the ginners' annual convention in Dallas. The article said, in part:

As manager of a family gin at Pattison, a town of some 500 population about 40 miles from Houston, Mrs. Donigan leads a diversified and busy life, particularly during the three months of the year when cotton is being ginned.

"My father was a cotton merchant," the soft-spoken woman explained, "and when I married in 1918, after graduating from Texas State College for Women with a home economics major, I kept the profession in the family."

Today, she is co-owner with her husband of four cotton gins in the state. They are at Whitewright, Simonton, Pattison and Brookshire. The latter is not in operation now.

"The hardest part of the job was to learn buying," Mrs. Donigan confessed. But she had to learn because World War II was on.

"Since there was a labor shortage of men I took over the active operation of the Pattison gin," the mother of a daughter who is a social welfare worker at the Veterans Hospital in Waco, said.

"The gin is what we call a small one as it processes only about 1,000 bales a season which is from Aug. 1 to Oct. 25. During this time I may work as many as 12 hours a day."

Arizona Soybean Dates

Just so growers don't get carried away with spring weather and plant soybeans too early, recommended planting dates for soybeans in Arizona are from May 1 to May 30, according to Lyman Amburgey, Extension soil specialist.

Early plantings add to production costs as more irrigation and weed control are needed and yields are not bigger. And late planting is just as bad, as this can produce shorter plants with bean pods growing too close to the ground for combining, reducing yields.

Greek Fats Authorization

An authorization has been issued to Greece for the purchase of up to $6,100,000 worth of cottonseed oil, soybean oil, or lard from U.S. suppliers, USDA announces. Contracts for the 31 million pounds of fat could be made from March 28 to Aug. 31 this year. CCC has no stocks of these commodities.

Spreader Terraces Pay

A spreader terrace system paid for itself in one year through higher yields of cotton and grain sorghum for D. D. Mahon, Shallowater, Texas. Since using the terraces to spread water over his sloping land, Mahon has averaged a bale of cotton per acre.

Legend Forecasts Crops

"Average" crops for the South Plains of Texas are indicated this season—if you believe in Indian legends. According to the Indians, the direction of the wind on March 22 at sunrise determines the fate of crops. This year, the wind was from the northwest, indicating average production.

USDA Reports on Fats, Oils, World Market Conditions

The market for U.S. oilseeds and fats and oils is strong, reflecting a record world demand, according to USDA. U.S. exports of soybeans are at a peak and shipments of edible oils and lard are running at a heavy rate. Agreements for over $130 million worth of food fats have been issued since mid-September 1955.

Prices of soybeans and edible oils have moved up sharply under the stimulus of the export demand. Soybeans rose from a low of $2.22 per bushel in mid-October to about $2.50 in mid-February and have increased an additional 13 cents per bushel since then. Heavy production of lard kept prices well below those for the edible oils, despite a high rate of domestic disappearance and exports.

Cotton Contest To Continue

Oklahoma Cotton Research Foundation has announced that it will continue to sponsor the cotton contest for Future Farmers and 4-H members in 1956, and that winners will make a trip to the Lower Rio Grande Valley of Texas and Mexico. Winners of the 1955 contest, as reported March 24 in The Press, will make a trip to the Far West.

Cotton Diseases Take Large Yearly Toll

By A. J. MILLS

President, Texas Cottonseed Crushers' Association

■ COTTON DISEASES take a much bigger "bite" out of our cotton crop each year than most people think. For example, estimates indicate that the 1955 crop was reduced by 1,706,334 bales or 11.45 percent from diseases. These losses are of great concern to the crushing industry; for they not only reduce the volume of seed but in many cases the quality of seed as well. Root rot, angular leaf spot, boll rots, and the wilt diseases are known to seriously affect seed quality.

This cotton disease estimate is prepared from information gathered by fifty outstanding scientists, mostly plant pathologists trained to estimate disease losses accurately. A breakdown of the 1955 loss in bales by states follows: California, 137,500; Arizona, 100,805; New Mexico, 26,466; Texas, 412,838; Oklahoma, 54,890; Missouri, 70,389; Arkansas, 236,163; Louisiana, 61,551; Mississippi, 208,050; Alabama, 78,270; Georgia, 73,338; South Carolina, 103,165; North Carolina, 90,205; Tennessee, 52,704.

The principal diseases causing losses are: Seedling diseases—363,533 bales; boll rots—322,082 bales; bacterial blight—222,611 bales; verticillium wilt—189,168 bales; fusarium wilt—173,883 bales; root knot—164,795 bales; root rot—164,236 bales; anthracnose boll rot—89,833 bales; and ascochyta blight—12,246 bales.

The report of the Cotton Disease Loss Committee, headed by Dr. Philip J. Leyendecker, New Mexico A. & M. College, has stimulated a great deal of interest and action in every cotton growing state. As a result, research activities have stepped-up, findings are released rapidly and control measures recommended.

As president of the Texas Cottonseed Crushers' Association, I would like to commend the Cotton Disease Loss Committee, and to urge its continuation; for we feel they are making a most worthwhile contribution to more profitable cotton production.

Teamwork of research, education and industry have brought many permanent benefits in the past two decades in economical production of quality cotton—the major income of 13 million individuals.

JOHN M. SAUNDERS

Teamwork — Its Importance in Economical Cotton Growing

By JOHN M. SANUDERS
Extension Agronomist,
USDA, Washington

THERE ARE many segments of the cotton industry. To one it is production; to another it is ginning; to another it is genetics; to another it is crushing seed; and to others it is marketing, warehousing, production of chemicals and farm equipment. To some 13 million individuals it is the major source of income.

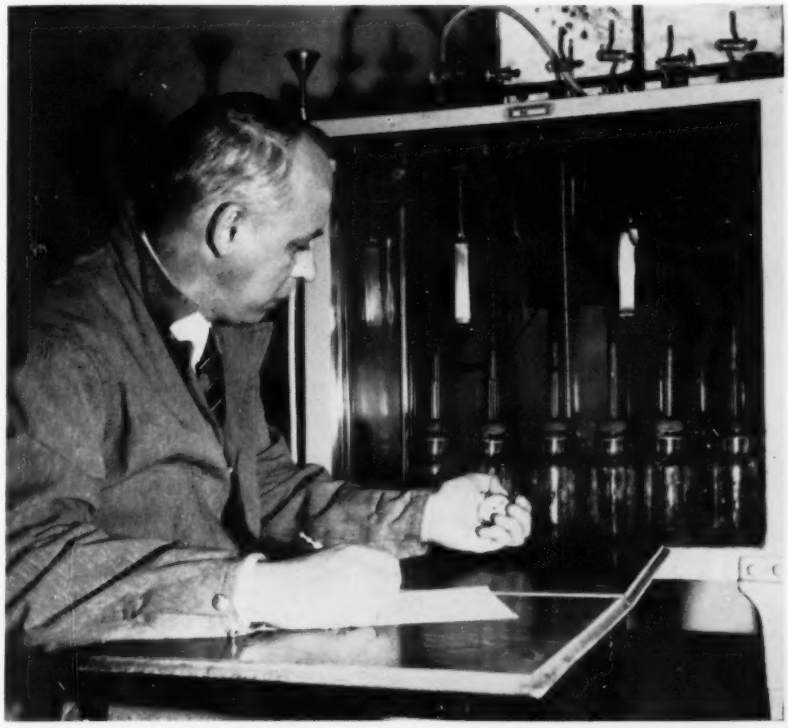
During the past two decades many advancements have been made in the economical production of quality cotton, with the most significant progress being made through programs in which research, education, and industry coordinated their efforts toward solving specific problems. This article gives examples of teamwork between research, education, and industry which have resulted in permanent benefits to producers, consumers, and industry, and shows how the teamwork approach can assure the greatest progress in the future.

• **One Variety Program** — The first coordinated cotton work between research, education, and industry started in 1931 as an effort to correct quality and yield problems that extended across the entire Cotton Belt. At that time more than 400 varieties of cotton were being grown, many of which were inferior both in yield and quality. Through the joint efforts of the Bureau of Plant Industry, state Extension Services, and the ginning industry, cotton production was standardized by varieties. This was first done on a community basis, then by areas, and finally on a Beltwide basis. By 1945 fewer than 20 varieties were being used to produce the total U.S. crop. During this same period, yields were increased by an average of 65 pounds of lint cotton per acre, accompanied by increased staple length of six percent and fiber strength of 6.7 percent.

To utilize research improving yield and fiber properties, planting seed programs were developed to assure adequate and dependable supplies of the adopted varieties. This was made possible through the cooperation of private and governmental plant breeders who gave priority to the distribution of breeder seed on a non-profit basis.

Although the variety situation was now greatly improved, other problems such as insect, disease and weed control, mechanization, harvesting, ginning, and marketing were demanding attention which prompted the next concerted effort.

• **The 7-Step Program** — In 1945 the 7-Step Cotton Program was developed through the joint efforts of the state Extension Services in the Cotton Belt, 10 agencies of USDA, the National Cotton Council of America, and 16 national organizations. The basic features of the program are (1) it brings together in one program the work on cotton being done by the state Extension Services, and (2) it calls for cooperation of all organizations and agencies concerned in one coordinated cotton educational program. The 7-Steps which research, education, and industry have used as a



CHECKING cotton quality with a stop-watch. Each tube, in the picture on the right, contains pulverized cotton and a chemical. Deterioration of the fibers is measured by timing the speed with which the solution flows through the tubes at the base of the larger cylinders.

blueprint to coordinate their activities are:

1. Fit cotton into balanced farming.
2. Take care of the soil.
3. Get together on the best variety.
4. Use labor-saving equipment.
5. Control insects and diseases.
6. Pick and gin for high grade.
7. Sell for grade staple and variety value.

The application of research through education with the close cooperation of industry has made many additional advancements in cotton production and processing since the start of this program. During the period 1944-54, cotton acreage declined by 1,180,000 acres from the previous 10-year period, yet the number of bales produced was approximately the same, due to increased yields per acre.

Use of fertilizer has increased greatly—both in the number of acres fertilized and the amount used per acre. Cotton planted during 1928-32 received an average of 85 pounds of fertilizer per acre compared with an average of about 195 pounds for cotton planted during the 1950-54 period. Furthermore, the plant nutrient content of the fertilizer was considerably higher during the latter period. The increased use of fertilizer accounted for much of the higher yield during this period. And as cotton acreage decreased, selection of the best land for cotton production played an important role in increasing yields.

It is difficult to assess the exact contribution of individual practices such as insect and disease control, better varieties of seed and better tillage methods to increased cotton yields, but they all have had an important effect and are likely to continue to increase yields substatnially in the future.

Irrigation has also played an important part in increasing yields in the High Plains area of Texas where little or no cotton was irrigated in the early 40's, contrasted to an estimated 1.7 million acres under irrigation in 1953. There is much interest, too, in the irrigation of cotton in humid regions and it is likely this practice will increase in the future.

Mechanization has been an important factor in lowering the man-hours of labor per bale of cotton produced—from 260 hours in 1930 to 95 hours in 1954. While this has been an important consideration in lowering production cost and offsetting labor shortages, it has materially added to the farm investment and has created new problems for the producer with a small cotton acreage.

Through the cooperation of research, education and the ginning industry, rough preparation has been greatly reduced. The first commercial lint-dryer was developed through research in the early 1930's, and has been largely responsible for the elimination of rough preparation. reducing it from an average of about eight percent to less than one percent at the present time. During the past several years, through further cooperation of research, education, and industry, gin operator training schools have been held to assist operators in getting the maximum efficiency from the gin machinery employed.

The Smith-Doxey Classing and News Service has made it possible for the farmer to know the value of his cotton, based on grade and staple value.

• **Complete Cotton Demonstrations** — Past progress in cotton production has resulted from application of many scientific practices — mechanization, improved varieties, insect, disease, and weed control, better fertilization, harvesting and management. However, all these advances, together with changing market demands, have made cotton farming a more complicated scientific job. Insects still take a heavy toll; farmers still feed a lot of fertilizer to weeds, diseases, insects, and poor management. Cotton yields of the average grower in most communities are less than half of what better growers obtain. And who knows what the efficient top yield could be?

In 1954, directors of the Southern States Extension and Experiment Stations appointed a joint committee to develop a plan for complete cotton demonstrations which would include all practices which research and successful farming experience have proved to be of value. After careful study and consideration, the committee recommended the appointment of a continuing team of research scientists and Extension specialists, including cotton agronomists, plant breeders, soil chemists, entomologists, plant pathologists, agricultural engineers, economists, and marketing specialists. The joint committee further recommended that the team be charged with the development of a comprehensive interdependent program of research and education to work on the problems of the cotton farmer. The primary function of this joint team of education and research workers was:

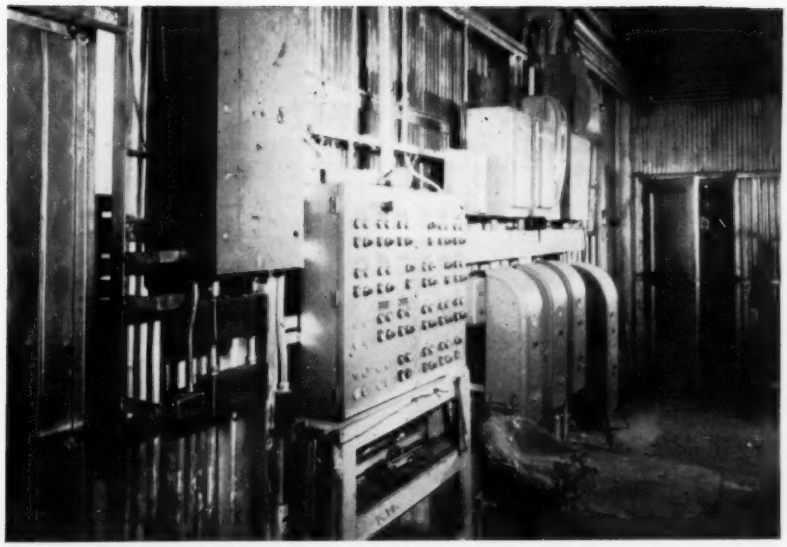
1. To envision and design a rounded program of education and research for improved production, harvesting and marketing in the state.

2. To provide a mechanism for the interchange of information, ideas, and suggestions. Each state team or committee naturally designed the type of program best adapted to its own state.

As a result of the committee's recommedations and the excellent leadership of county agents, 800 whole farm cotton demonstrations were conducted during 1955, and indications are that the number will be greatly increased during the current year. To acqaint other cotton producers with the application and procedures used, field meetings were held on several hundred demonstration farms where each practice being used was discussed. Demonstrators kept records to better evaluate the advantages of following recommendations proposed by the team of research and Extension specialists. The federal Extension Service in cooperation with the state Extension Services is analyzing results obtained through this approach, by states as well as on a Beltwide basis. Results of this study will be available for educational use during the current season and information obtained should be helpful in correcting production and quality problems.

Many problems have been solved during the past two decades, but there are many more yet to be solved if cotton is to remain the prinicpal sourse of income to the 13 million people who now depend upon it.

With the continued cooperation and teamwork of research, education, and industry, decisions can be made and solutions found to insure cotton's future position in the competitive markets of the world.



CONTROL CENTER of the Farmers' Cooperative Association Gin of New Home, near Tahoka, Texas, is shown here, with the panelboard and motor starters. With these controls a single operator can start or stop the entire plant, any part of it, or any individual machine. Each motor is protected by a magnetic switch which will kick out to prevent overload should the ginning machine it drives become choked by lint.

New Approach to Operation

Unit Drive System Proves Value at Gin in Texas

■ TWENTY-THREE electric motors, each driving one machine, enable Farmers Co-op Gin of New Home to handle more cotton with same labor and equipment, while reducing maintenance.

A NEW APPROACH to the cotton gin operation is resulting in the ginning of 50 percent more cotton with the same labor and gin equipment and reducing maintenance to simple inspection and lubrication at Farmers Cooperative Association No. 1 Gin of New Home, RFD 4, Tahoka, Texas.

The gin recently installed 23 new-type electric motors, each driving one machine, as listed in the table accompanying this article. Changing over to unit drive, with motors incorporating special protection against lint clogging has enabled the gin to step up output from 140 bales to 212 per 24-hour period, about one bale every six minutes, according to Harold Quinn Sharp, manager. The individual drives make it possible to stop any machine or machines without affecting the operation of the rest of the plant.

Since the electrified gin began operation in September, 1955, there hasn't been a single shutdown due to lint fouling a motor. The Tahoka co-op is one of the first gins to make economical use of motors of a new high-velocity air-cooled type which operate dependably under extreme conditions.

To accomplish the change-over to unit drive, Sharp utilized the services of the W. M. Smith Electric Co. of Lubbock, Texas. H. J. Witcher, manager, engineered the conversion.

Sharp decided that the slightly higher initial cost of high-velocity air-cooled motors was more than offset by their freedom from clogging and cleaning problems. This type of motor can be serviced when necessary by any local motor repair shop, and is cooled by a powerful radial fan which also blows lint and dirt clear of the motor.

Since windings and rotors are completely sealed against dust and lint, the motors are prevented from overheating because of clogging. Despite 24-hour-a-day operation under unfavorable conditions, the motors have not required vacuum cleaning or blowing out.

"On top of an early freeze, we had sand storms that put a lot of trash in the cotton, so that at times the motors were exposed to a steady shower of sand and lint," Sharp declared. "The fan cooling system of these motors makes them ideal for a hot, dirty location. My personal opinion is that you would have to search far and wide to beat the ACEC motor for dependability and service."

The electrified gin has a control center that can function manually or automatically. It permits one operator to start or stop all the machinery, any part of it, or any individual piece of equipment. Each motor is protected by a magnetic switch that kicks out should the driven machine begin to choke with cotton.

Electrified Cotton-Ginning Equipment* at Farmers Co-operative Association No. 1 Tahoka, Texas

No. of Units	Type of Ginning Equipment	Motor H.P.
1	Twin 50-inch suction fan	60
1	40-inch air blast fan	50
1	45-inch moist air fan	40
1	40-inch bur fan	40
1	40-inch hot air fan	30
1	Tramper counter shaft	25
1	2-10' bur machines	20
1	Double Moss lint cleaner	20
1	Double Moss lint cleaner	10
2	Double Moss lint cleaner	3
1	Conveyer and distributor	15
2	I type H. E. cleaners	10
5	Twin Mitchell hot air fans	15
1	Press pump	15
1	30-inch dirt fan	10
2	Air line cleaners	7½
1	Conveyer in bur hopper	2

*All motors are 1800 RPM, 440 Volts, 3-phase, 60 cycle.

H. J. WITCHER, left, manager of the Lubbock Branch of W. M. Smith Electric Co., and Harold Quinn Sharp, manager of Farmers' Cooperative Association No. 1, were leaders in the gin electrification program.

• Supply and Demand Situation Shakey

THINGS MAY be getting more like the old days—the very old days—when women did all the work and men were really "lord and master." Things haven't reached this stage yet, but maybe we're in the process of completing another cycle, according to a recent issue of Arizona Progress.

The reason for this turn of events is that men are getting scarcer—corresponding somewhat to the buffalo situation. According to the Census Bureau there are 98.5 men for every 100 women. (Statistics on buffalo were not available). At any rate there are usually a couple of extra women at every party and no way to distribute that half a man or even make a part time arrangement.

The Progress went on to say that "the female of the species is not only deadlier, but healthier, than the male. The masculine mortality rate is higher for two apparent reasons: (1) overwork (2) jealous females. Funny thing about the latter. Instead of bumping off their rivals, they invariably take pot shots at the so-called 'object of their affections.' This doesn't make sense but a women scorned isn't given to fine points of logic."

"Anyway, if not too full of holes, men are definitely in a 'seller's market.' The chief sources of demand are (a) women (b) businesses (c) the armed services. Competition is pretty keen. As a result, men are becoming more choosey, not only as potential husbands but as job holders.

"Employers are finding this quite troublesome. Job applicants will grant you an interview only if you assure them of (1) high pay (2) short hours (3) long vacations (4) early retirement (5) an air-conditioned office, and (6) a secretary that looks like Marilyn Monroe. Some of them even insist that you also hire Marilyn in the-er-flesh."

Uruguayan Leaders Visit Plant of Murray Co.

Uruguayan industrial and governmental leaders were guests of The Murray Co. of Texas on March 30 during a tour in Dallas. The group visited the Murray plant and were entertained at lunch there.

Carlos B. Moreno Cabana, Uruguayan Minister of Industries and Labor, headed the group, which included Roberto Aguirre Gestido, manager of Cristalerias Gauchon S. A.; Juan Ablerto Canepa, manager of Compomar & Soulas S. A.; Carlos Frick Davie, president of Estancias El Aguila S. A., lawyer and rancher; Pedro F. Garone Caballo, manager of Milines Gramon S. A.; Carlos Jung, director-manager of Ledama, Ltda.; Felix Kalaizich, Frigorifico Nacional; Luis Celestine Panizza, chief dispatcher of the foreign department, Bank of the Republic; Carlos Queralto Oribe, professor of economics and sociology, Ministry of Public Education; Daniel Rey Vercesi, technical adviser, Ministry of Industry and Labor, and Julio Maria Ruiz, director of industrial operations, Rausa Fidero.

■ **WILLIAM F. McFARLANE, Clovis, and JOHN GILLI, Bakersfield, each a gin president, have been named to the board of directors of California Cotton Cooperatives.**

New Product

AUTOMATIC SEED TREATER DEVELOPED BY PANOGEN

A new automatic liquid cottonseed treater has been announced by Panogen, Inc., of Ringwood, Ill.

An important feature of the new treater is a continuous full-flight auger feed which enables it to handle easily the output of four delinting stands without clogging. Capacity varies between five to eight tons of cottonseed per hour, depending on type. When used for cereal grains, it will treat 600 bushels per hour.

Equally important is the fact that the new model offers completely automatic, continuous treating and can operate for a full day without stopping. Once the feed lines are connected to the shipping drum, the liquid disinfectant is automatically pumped to the treater, where it is accurately metered by the Panogen "dipper" system. There is no hand measuring or mixing and coverage of seed is said to be extremely uniform.

Because Panogen seed disinfectant is a liquid, the treating process is completely dust-free. Since the liquid is non-settling, there is no accumulation of sediment inside the machine. Clean-out of seed is completely automatic. A built-in exhaust fan eliminates seed dust and fumes, the manufacturer points out.

The treater is powered by a totally enclosed one horsepower single or 3 phase motor. The pump is operated by a one-ninth horsepower enclosed motor.

A slurry adapter is available as optional equipment for use in treating corn.

Further information on the new Panogen cottonseed treater may be obtained by writing Panogen, Inc., Ringwood, Ill., or The Cotton Gin and Oil Mill Press, P.O. Box 7985, Dallas 26.

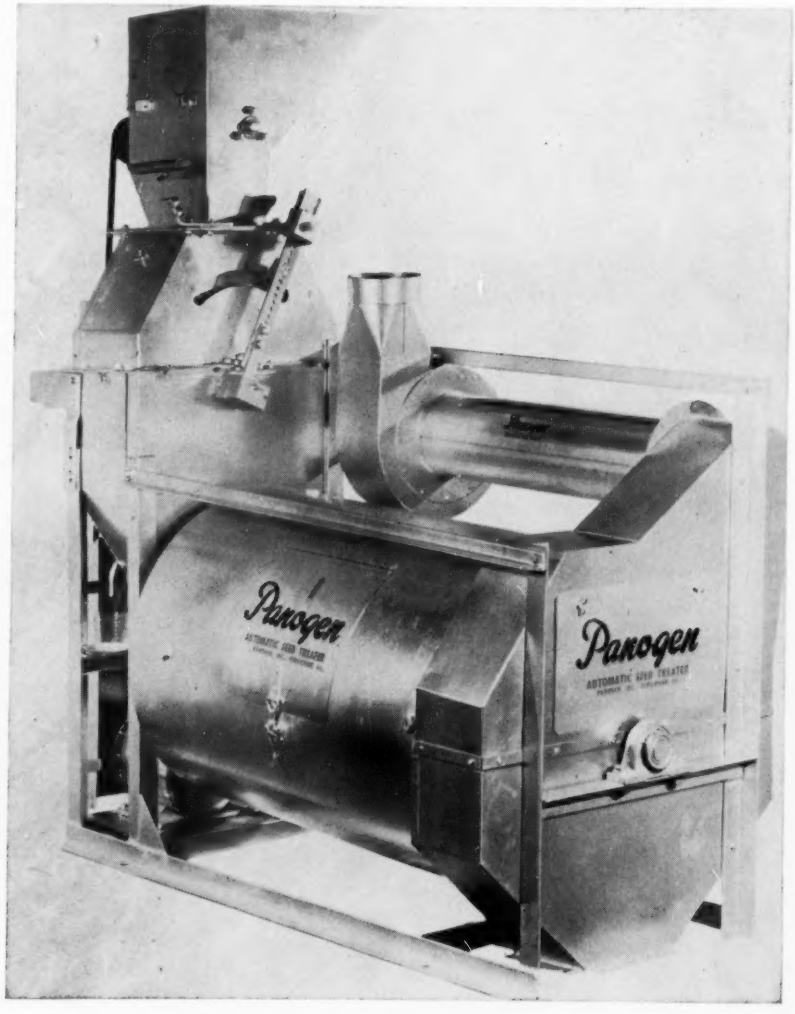
Fred Lovitt Organizes New Memphis Brokerage Firm

Fred C. Lovitt has resigned as a partner in L. B. Lovitt & Co. and has organized the firm of Fred Lovitt & Co. at 415 Cotton Exchange Building, Memphis.

The new firm will conduct cash and futures brokerage business in soybean and cottonseed oil and meal.

Entomologists Will Meet

Countries throughout the world, including those behind the Iron Curtain, will send delegations to the tenth International Entomological Conference in Montreal, Aug. 17-25.



Disease Losses

(Continued from Page 22)

down on wind movement, making conditions ideal for growth of the boll rotting fungi.

Insects which feed upon the bolls (pink bollworm, cotton bollworm, boll weevil, etc.) produce openings through which fungi may become established and destroy the developing fiber. So, an adequate insect control program will materially reduce losses from boll rots. In rank cotton, bottom defoliation is helpful in opening up the lower part of the plant, allowing for the penetration of sunshine and increased air circulation.

Use of blight-resistant varieties, where available, will also help to eliminate injured bolls which may be further destroyed by the rotting fungi. Boll rots can not be entierly eliminated, but losses can be lessened by following these few simple preventative measures.

Verticillium wilt, a disease caused by a soil-borne fungus, becomes more of a serious threat to U.S. cotton production each year. Four years ago, this wilt accounted for a loss of 61,277 bales, compared to 189,168 bales in 1955. A considerable amount of this loss occured in the cotton-producing states east of the Mississippi River, where in the past the disease had almost been considered a novelty. In 1955, increased losses were recorded from Texas, Mississippi, Arkansas, North Carolina, and Tennessee.

The severity of verticillium wilt is very closely correlated with climatic factors. Cool, moist growing seasons favor disease development. Verticillium wilt may be partially controlled by certain cultural methods which are particularly suited to the irrigated Southwest, where the disease causes serious yield losses. The same cultural operations, where applicable, may also be beneficial in controlling wilt in the Southeast. Thick spacing, by increasing the plant population per acre, shows considerable promise in reducing losses. Increases of 1,000 pounds of seed cotton to the acre on severly infested land have been realized when stand counts were increased from 14,000 to 45,000 plants per acre. In this operation, fields can be planted to a stand, thus eliminating costly hand thinning. Mechanical picker efficiency has also been increased by thick planting.

• **Rotation Beneficial** — Rotation with small grains has proven beneficial in reducing verticillium wilt losses. Dry, clean fallow for one year has also reduced the percentage of wilt in the following cotton crop. With the present emphasis on the soil bank plan, fallowing of severely infested land may prove very beneficial and economical. In the irrigated Southwest, a high double-row bed, which increases soil temperature, has helped to reduce wilt losses. Any, or a combination, of the preceding cultural practices may be used to increase yields on land infested with wilt. In California, the recent release of a new strain of Acala 442 which carries some tolerance to wilt will certainly help boost yields. In other Southwestern States, however, the tolerance of 442 to wilt is not as striking. Texas has also just released a tolerant strain of Acala called 1517 Y-1, which is adapted to areas in the Southwest where 1517 is now grown. Other states are developing adapted tolerant strains of Upland cotton, although it will take considerable time before they are released commercially. (Note that only tolerance to wilt has been discussed, because as yet, genetic resistance to verticillium wilt has not been found in the American Upland cottons.)

Bacterial blight, sometimes called black arm or angular leaf spot, not only reduces yields, but also causes a staining of the fiber. Despite the discovery of resistance to blight 25 years ago, in 1955 it caused losses in every cotton-growing state in the nation, totaling 222,611 bales. As the blight is seed-borne, the seed must be acid-delinted or treated with a disinfestant before planting. Even then, a small number of seed may carry the causal agent under the seed coat. If the seedlings from such infected seed servive, they will serve as infection centers for spread of the disease.

In the moist areas of the Cotton Belt, once blight becomes established in a field, the infected plant debris must be deep plowed to destroy the disease organism. But in the Southwest, the disease over-winters upon infected plant debris, even though it has been plowed under. So, in the Southwest, rotation with a non - susceptible crop (grass, small grain, or alfalfa) is necessary for adequate control.

Resistant varieties are being developed by the various state Experiment Stations in cooperation with USDA. Cotton growers can contact their state Experiment Station to determine the present status of blight-resistant varieties. Last year, the New Mexico Experiment Station and USDA released a blight-resistant strain of Acala known as 1517 BR. A considerable acreage was planted to this variety in New Mexico and Texas in 1955.

Until locally-adapted resistant strains are available, growers should make sure that they are planting treated, disease-free seed. Rotation with non-susceptible crops will also help to reduce blight in seriously infested fields.

Fusarium wilt, a soil-borne disease, is chiefly confined to the Southeastern cotton-growing states. It is associated

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with the root rot nematode, a microscopic eel-like worm, that feeds on cotton roots, making small openings for the disease organism to enter. Severity of wilt is usually determined by the prevalence and feeding of the root rot nematode. This association is referred to as the fusarium wilt-nematode complex. Adequate control methods have been developed. Last year, however, fusarium wilt caused a loss of 173,883 bales in the U.S. One of the most significant advances in the control of this disease has been the release of Auburn 56 by the Alabama Experiment Station. This variety carries a very high degree of tolerance to the fusarium wilt-nematode complex and appears to be well adapted to the Southeast.

Land infested with fusarium wilt may also be treated with Dowfume or DD to control nematodes and thus reduce the percentage of wilt. When commercial fertilizers are used, the nitrogen, phosphorus, and potash should be in proper balance, because potash hunger, or rust, will increase wilt damage. Where practicable, rotate non-susceptible crops such as grasses, sorghum, small grain, corn, and peanuts to increase yields on fields infested with nematodes and fusarium wilt. With such satisfactory means of control, you can cut your losses from fusarium wilt by following the recommended control practices.

• **Underground Symptoms** — Root Knot nematode. You can contorl this pest with comparatively cheap hydrocarbons that have been adapted for soil fumigation. Yet yearly losses in every state where cotton is grown may run as high as four to five percent. On a Beltwide basis, 164,795 bales were lost in 1955. Such severe losses are probably caused by a lack of knowledge about the life history and occurrence of the root knot nematode. Symptoms produced by this pest are mostly underground, and the aboveground symptoms may be easily confused with poor fertilization.

The root knot nematode, a microscopic eel-like worm, is commonly found in light, sandy soils. The root system of the cotton plant is greatly reduced by nematode feeding. Water and nutrients can not be taken up in adequate amounts, and the plants suffer from severe stunting and reduced boll formation. Infected roots are covered with small knots or galls, which can be easily seen by carefully removing the suspected roots for the soil.

Fields infested with root knot nematodes can be treated with DD or Dowfume for $12 to $14 an acre. Yield increases of over a bale to the acre have been reported as a result of treating with these fumigants. They are usually applied in the seed bed just before planting. Commercial applicators charge a very small fee for this service. DD and Dowfume are effective because they reduce the nematode populations in the vicinity of the cotton roots. By the end of the season, however, the populations may have built up to a point where fumigation is necessary the following year. In most of the severly-infested fields, annual fumigation is recommended. In addition to soil fumigants, crop rotation has proven to be beneficial in reducing losses. Non-susceptible crops, such as grasses, small grains, sorghums, and peanuts, have given satisfactory results.

Root rot is a soil-borne disease confined to the alkaline, calcareous soils of the Southwest. Cotton is one of more than 2,000 hosts attacked by this fungus. Root rot caused a loss of 90,000 bales in 1955. Losses were highest in Texas.

Root rot disease is characterized by sudden wilting followed by a complete collapse and death of the plants. The dead plants occur in definite, well-defined patterns in the field. After many years of painstaking research, certain cultural practices have been developed which alleviate damage caused by this disease. Very satisfactory control of root rot has been obtained in Texas, where a legume crop is plowed under every year and followed by cotton. Hubam and sour clover have been tried

Valley Processors At Convention

Members of the Valley Oilseed Processors' Association are in Biloxi, Miss., for the organization's annual convention April 9-10 at the Buena Vista Hotel. Details of the convention program appeared in the March 24 issue of The Press, and the metting will be reported in the April 21 issue. Valley officers for 1955-56 have included F. H. Jarrell, Little Rock, president; Robert H. Patterson, Trenton, Tenn., vice-president; and C. E. Garner, Memphis, secretary.

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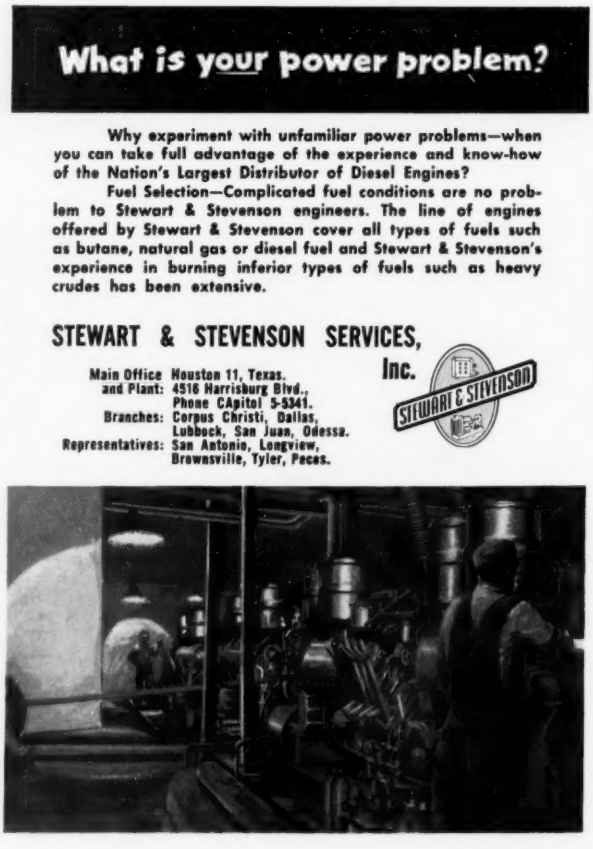
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with excellent results. Other beneficial practices are deep early fall plowing, use of organic manures, two or three-year rotation with non-susceptible crops, and planting of early maturing varieties which set a satisfactory crop before the disease attacks.

So, you see, you can cut your cotton disease losses by using control measures that are now available after years of research.

Table 1.—Estimated reduction in 1955 cotton yield caused by parasitic diseases.

Disease	Bales Lost
Seedling Diseases (Rhizoctonia, etc.)	363,533
Boll Rots (Rhizopus, etc.)	322,082
Bacterial Blight (X. malvacearum)	222,611
Verticillium Wilt (V. albo-atrum)	189,168
Fusarium Wilt (F. vasinfectum)	785,164
Root Knot (Meloidogyne sp.)	164,795
Root Rot (P. omnivorum)	164,236
Others	106,026
TOTAL	1,706,334

Insect Control

(Continued from Page 23)

paratively recent test in Texas showed that where six applications were required, an average net gain of 635 pounds of seed cotton per acre or 106 pounds per application were obtained. Where 10 applications were required, the net gain per acre was 1,202 pounds or 120 pounds per application. In this experiment, the difference between no control and effective control, as measured by net income per acre, amounted to $11 per application. Such results have been duplicated many times across the Cotton Belt even when more than 10 applications are required and disprove the idea that insect control is not profitable when a relatively large number of applications are required for complete control.

On the whole, growers are doing a reasonably acceptable job of controlling cotton insects and some growers are doing an outstanding job year after year. However, there are enough poor jobs being done to make the record of average annual insect losses look bad. The average annual reduction from full yield of approximately 12 percent for the period 1945-54 is entirely too high for the level of efficiency that we must achieve in future cotton production.

The extreme variation in insect populations from year to year contributes to inefficiencies in insect control. A succession of drouth years, such as occurred in 1952-54, greatly reduced the insect problem, particularly the boll weevil, and excellent control came easy. Under these conditions it was only natural that many farmers developed a complacent attitude toward insect control, overlooked localized heavy boll weevil infestations in early summer, and were at least hopeful that 1955 would be more of the same. It is now well known in some sections of the Cotton Belt that the boll weevil came back strong and by mid-season had developed severely damaging infestations. Excessive rains, which interferred with effective application of insecticides and resistance to certain insecticides in some localized areas, made weevil control extremely difficult and severe losses resulted. Because of the potentially serious boll weevil threat for 1956, no cotton grower should take a chance on allowing damaging infestations to develop.

Boll weevils can be most effectively and most economically controlled during late spring or early summer when infestations are relatively low and cotton plants comparatively small. All fields should be checked carefully and threatening infestations brought under control before damaging numbers develop. Research has shown that a doseage of insecticide required to kill 95 per cent of boll weevils in June will kill only 90 percent in July, 71 percent in August and 42 percent in September. It is obvious that effective control may be extremely difficult and unnecessarily expensive if high infestations are allowed to build up by mid-summer and excessive rain interferes with scheduled applications of insecticides.

USDA Cotton Advisory Group Recommends Studies

Investigations of new chemical treatments, improved finishing materials, and possibility of modifying cotton fibers by means of nuclear energy radiations, were suggested by USDA's Cotton and Cottonseed Research and Marketing Advisory Committee at its annual meeting in Washington last month.

Also, studies on irrigation of cotton in humid areas, improved weed control, better processing methods for cottonseed oil and meal and work to aid in marketing cotton and cottonseed products were discussed.

New Mexico Interests Form Area Cotton Committee

Nearly 500 ginners and farmers met at Hagerman late last month to organize a cotton industry committee to aid in solving the more pressing problems of cotton producers, ginners and marketers in the area, Dr. R. B. Corbett, president, New Mexico A. & M. College, recently reported.

He announced that Morgan Nelson, East Grand Plains, and Howard Stroup, Artesia, would be the two farm representatives from the Pecos Valley among six farm representatives, two ginners and two marketing representatives on the newly named committee.

Others on this committee include: J. P. Archer, Rincon and Jim Cole, Berino, representing farmers in the Rio Grande Valley; Bud Lewis representing farmers in the Deming area; and Marvin McClish, Lovington, representing farmers in the eastern counties.

Ginners representatives include Billy Griffin, of Deming and Marshall Thompson, of Mesilla Park, the latter for the Rio Grande Valley ginners.

Marketing representatives include W. T. Squires, Southwest Irrigated Cotton Growers Association and R. T. Hoover Jr., El Paso, of R. T. Hoover & Sons.

Doctor Corbett also stressed that present plans call for establishment of a spinning laboratory on the campus of A&M. This will be an added cooperative effort with the government, in long-range plans to strengthen the position of the farmers in the areas of irrigated cotton.

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Good Fertility

(Continued from Page 26)

cotton farm or the Cotton Belt as a whole, the migration of the cotton crop to the more productive acres has been one of the striking changes of the past 30 years. Some say the shift Beltwise is most significant. No doubt. But the effect of shifting the crop on a given farm is not to be overlooked. Consider the farm that grew 80 acres of cotton in 1925 and a proportionate 30 acres in 1955. Any farm quite reasonably affords 30 acres of land that excel any 80 of its acres.

Without implying that the same land should go to cotton year after year, it is recognized that the cotton crop has a way of finding itself on the best land available on the farm in a given year. Too, it is easier to build up the productivity of 30 acres than 80, using such means as rotation, green manure crops, barnyard manures, and fertilizers. This, of course, has been done.

• **Increase in Fertilizer Outstanding** — To say that growth in use of commercial fertilizers has had a tremendous effect on cotton yields is but to repeat a widely understood fact. In 1925 when American farmers applied about five million tons to all their crops the cotton yield was 173 pounds. In 1955 when total fertilizer application exceeded 20 million tons, the cotton yield reached 416 pounds.

More precisely, it has been estimated the average fertilizer application to cotton in the period 1928-32 was some 85 pounds per acre compared with 195 pounds during 1950-54, and the average yield rose 125 pounds. Of this 125 pound increase, it is estimated that perhaps 50 pounds are properly attributable to the higher rate of fertilization.

Not so well understood as the increase in total fertilizer usage, but important nevertheless, are the improvements that have been made in the way fertilizers are used. In 1955 the nutrients obtained from commercial fertilizer were employed in a ratio of approximately 1-2-1 of nitrogen, phosphorus and potash. In 1955 this ratio approximated 1-1-1. Wide use of soil tests and the accumulation of test plot data and farmer experience had led to this adjustment. Also reduction in costs of nitrogen had its effect.

But this brings us to another advance that illustrates the interworking of improved practices. The development of improved insecticides made it profitable to increase the rates of fertilizer application, of nitrogen in particular.

Re-discovery, so to speak, of the interworking of lime and fertilizer, even for cotton, was still another development. Some studies in South Carolina, for example, show that the use of lime in conjunction with nitrogen fertilizers increased yields anywhere from 6 to 96 percent over those due to the fertilizer alone.

Improvements, in the manner and timing of fertlizer application have had their effect, as have improvements in fertilizer material themselves.

• **Grassland Farming** — In the last 30 years a maximum of some 28 million acres in the 12 states extending eastward from Texas to Oklahoma has gone from cotton to other crops — chiefly grass and timber. Neither of the new uses of the land is permanent, and particularly is this true of grassland.

Once the row crop farmer changes a field from row crops to grass, then back to row crops, he has had a demonstration of good land use that has been expounded for years. And this experience is having effect. Grassland farming is catching on in the South with the result that Cotton Belt soils are benefitting. The accompanying increase in livestock and the concern for winter cover crops all have added impetus.

Now comes the development of supplemental irrigation. At the least, it opens another avenue of related practice that may have far reaching effect on the way the cotton farmer of the future uses fertility in growing the crop.

The American cotton farmer has achieved the phenomenal in the direction of increasing his output. His use of fertility has been basic to this progress whether one is thinking of fertility in terms of choice of land, applied fertility, or that acquired otherwise through farming practice. To get the fire of progress going he has employed many sticks,—i.e., improved practices. That there are still other improvements to be made, is but to say there is still room for progress.

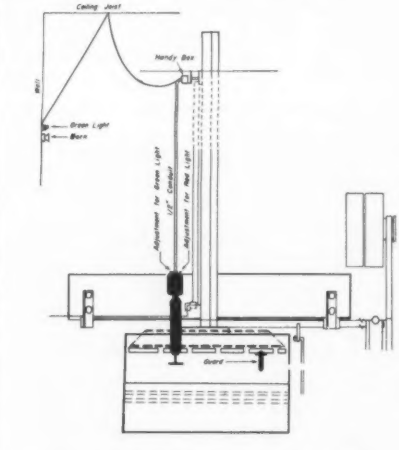
Quotes

Irrigation of cotton or any other crop is not a cure-all or guarantee of success. Along with irrigation will have to come high fertility levels, good insect and weed control and, above all, good management.—Ivan D. Wood.

From Our Authors

Paper-Covered Wood Proves Good Siding Material

Paper-covered low-grade wood shows promise of being a good siding matrial, according to tests made at the Forest Products Laboratory, Madison, Wis., USDA says. Research shows that low-grade lumber covered with resin-impregnated paper can be used not only for siding but for boards for house trim, cabinet partitions, shelving, paneling and signboards.



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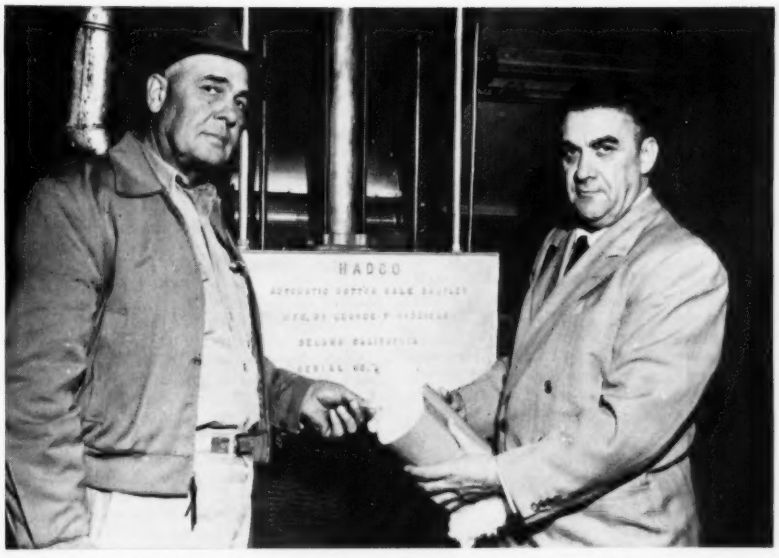

THE DEVELOPER of the new Hadco Automatic Cotton Bale Sampler, George F. Haddican, on the right, shows J. H. Campbell both halves of a sample taken from the automatic sampling machine. Each 18-inch sample is cut into two equal parts, one for the government classing office and the other identical sample is available for buyers' inspection.

• Automatic Samplers Used by Gins

SAMPLES of cotton are being taken automatically at 22 California gins which last fall installed the Hadco Automatic Gin Sampler, according to George Haddican of Delano, Calif., developer of the device and head of Hadco Manufacturing Co.

The sampler, which eliminates the disadvantages of manual sampling, automatically produces a miniature bale of layered cotton while the large bale is being formed. Taking its samples just before the cotton goes to the press, the machine delivers them into a paper tube 18 inches long and compresses them in easily distinguishable layers.

Several samples are taken from the actual bale making the miniature a representative sample. Packaged with the government sample card and with the bale tag stub inside, the sample may be quickly identified and classified and cannot be replaced in its original form after removal from the paper.

Three other such machines are in operation in the U.S., all built by USDA. Haddican, who is licensed by USDA to manufacture the machine, obtained the original plans from the government but has made some changes in its initial design.

Operation starts with a valve with a streamlined cross-section similar to an airplane wing which is placed in the gin lint flue across the mouth of a branch duct. The valve, when swung at right angles across the stream of lint cotton, diverts a small portion of it into the branch duct which takes it into a small cotton condenser on the sampling machine itself. Operation of the valve is automatic.

After the cotton goes into the small condenser, a doffer rolls the cotton into a bat. A lint cylinder tramps the bat down into the press and a vertical air cylinder compresses it to bale density in the press box. The tramper locks into the down position when the ginning of the large bale is complete. Then three air cylinders push upwards, compressing the sample to the same density as a large bale. A horizontal cylinder pushes the sample into the paper tube, and the sample is ready to be pulled from the side of the machine.

There are nine air cylinders, fixed timers, adjustable timers and relays to make the operation completely automatic. It does not require special operators; regular gin workers can handle it. However, Haddican expects to service his machines for a period of time after installation.

• HumKo Co. Celebrates Silver Anniversary

THE STORY of the HumKo Co.'s growth under the leadership of two men from a struggling young company 25 years ago to one of the largest concerns of its type today is told in the company's twenty-fifth anniversary brochure.

The Memphis-born company was founded on May 30, 1930 at the bottom of the depression by Herbert Humphreys and his partner S. L. Kopald. The company name came from a contraction of their two names.

When the two started out, the late Kopald, former board chairman, got up before dawn to collect orders from wholesale grocers after which he would return to the small plant to fill them with Humphreys, present chairman of the board. The two had one idea and that was to give the public a basic food ingredient of uniform quality at a fair price.

First production was of household shortening, but as the plant had no hydrogenation facilities hydrogenated oil was purchased outside. These facilities were added in 1933. HumKo began supplying hydrogenated oil to margarine manufacturers in 1938 and is now one of the leading companies in that field.

During World War II, HumKo made hydrogen gas for the Army's barrage balloons. And for producing high grade shortening and allied products for the armed services during the war, the company was presented the "A" Award by the War Food Administration for outstanding achievement in food processing.

In September, 1952, the company was merged with the National Dairy Products Corp.

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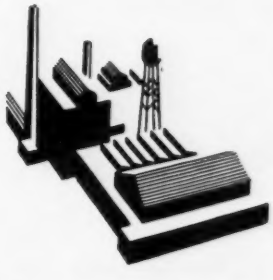

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(Continued from Page 19)

ago, in the Mississippi Delta. State and federal researchers and educators, working closely with the farm equipment industry, helped growers adapt their practices to the new machines. The flame cultivator also came into the picture about the same time as the spindle type picker. It was apparent that the field must be quite free of weeds and grass at harvest time for the picker to work well.

Pioneer leadership in the administrative support to research in field mechanization can be credited to Clarence Dorman, the director of the Mississippi Experiment Station. James E. Adams, then superintendent of the Delta Branch Experiment Station, also was responsible for early research in this new area of work. He was ably assisted in the field by W. E. Meek, agricultural engineer at the Delta Station, and former industry man, who worked jointly in the USDA-State program.

Field mechanization quickly intensified problems for the cotton ginner. Charles A. Bennett, assisted by Charles M. Merkel and others of the U.S. Cotton Ginning Laboratory at Stoneville, Miss., led in the improvement of gin machinery, accessories and methods to meet that challenge. This same group continues to make a vital and indispensible contribution through research to the ginning and cleaning of mechanically harvested cotton. Both the spindle picker and the stripper type harvester heap many difficult problems on the ginning operation.

While the spindle picker made its start in the Delta, the stripper began to appear on the plains of Oklahoma and West Texas. H. P. Smith of the Texas Experiment Station perfected a roller type of stripper. Don L. Jones, superintendent of the Lubbock Substation in Texas, led the work in the High Plains area. E. W. Schroeder and associates of the Oklahoma Experiment Station made valuable improvements to the stripper through brush devices mounted on the rollers, and by a pneumatic conveyor or loader.

A phenomenal growth in cotton acreage in the irrigated sections of Arizona and California took the spindle type picker westward. The grower, farm equipment industry, state and federal researcher and educator, and the somewhat harassed cotton ginner further joined in the effort to surmount the multiplicity of new problems.

Meanwhile, related problems arose as mechanization advanced. Uniform spacing of rows and spacing of plants within the row became more important with machines and mechanical power than was true of hand labor and animal power. Precision became a key word in seedbed preparation, planting, cultivating and harvesting.

• **Cotton Plant Remodeled** — Other work areas in the production of cotton have undergone changes quite as spectacular and significant as has mechanization. Cotton genetics and breeding, in the hands of both privately and publicly employed scientists, have remodeled the cotton plant to fit special growing and harvesting conditions. Inspired by the need for speeding up the slow process of breeding and selection of cotton, and encouraged by certain "pilot plant" experience in growing the crop in winter in Mexico, Dean Stahmann, a grower and cotton breeder of Las Cruces, N.M. proposed at an annual meeting of the National Cotton Council that a station be established in Mexico to serve state and federal research and private seed farms. It would permit the growing of a crop there in winter, followed by the usual summer crop in the States, thus lessening the time required for a given number of successive generations and attendant selection.

The idea of a sub-tropical station caught on to the extent that a volunteer committee of Dean Stahmann, Claude Welch, C. R. Sayre, then chief of the USDA Cotton and Other Fiber Crops Section and L. E. Hawkins, director of the Oklahoma Experiment Station, made a trip into Mexico looking for a suitable location. As a result of this exploratory trip and the enthusiastic support of the proposal by many people who were interested in it, such a station was located near Iguala, State of Guerrero, Mexico.

Operation of the station in Mexico is an example of genuine cooperation by numerous indiividuals, groups and agencies. The National Cotton Council, under the executive committee chairmanship of A. L. Durand, voted a revolving fund of $10,000 to facilitate the activity. The USDA Cotton and Other Fiber Crops Section, headed by Henry D. Barker, who succeeded C. R. Sayre, supplied an unusually capable and adept man, experienced in working with the Mexican people, to superintend and conduct the work. That man, Lon Lytton, is due a large share of credit for success of the work. He and his wife, Marie, live in Mexico the half year or more necessary to handle the winter crop, and in their own home at Las Cruces, N.M. the other part of the year.

Finally, it is the participation by cotton breeders in the States, who send planting seed to Lon each fall and receive the produce thereof back from him in spring, that close the cooperative circle. Fees are paid by the experiment stations and private seed farms for services thus rendered. These moneys reimburse and reconstitute the revolving fund that was advanced by the National Cotton Council. The operation is more than successful; it has been so well handled that a reduction in the rate of fees was possible after the first two years.

An important group, directly responsible for the publicly financed research in cotton genetics, is a Regional Technical Committee with T. R. Richmond as chairman. Richmond jointly represents USDA and Texas Experiment Station.

Other vital areas of work related to improvement in the production of cotton are characterized by similar close and coordinated teamwork. Insect and disease control, fertilizers and other areas receive the attention necessary to keep pace with the subject matter areas described above.

• **Cooperation in Oklahoma** — Perhaps description of parallel and somewhat more pinpointed cooperation within one state would further illustrate this modern way of working improvement in the production of cotton. Some eight years ago Horace Hayden, secretary of the Oklahoma Cotton Ginners' Association and the Oklahoma Cottonseed Crushers' Association, conceived an organized mechanism through which the several

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elements of the cotton trade in Oklahoma could support research, education and promotion for improvement of the crop and the good of the industry.

This took form in what became known as the Oklahoma Cotton Research Foundation. Its board of directors was made up of six men, one representing each of the following segments of the industry: (1) grower, (2) ginner, (3) cottonseed crusher, (4) cotton merchant, (5) cooperative marketing, (6) compress and storage. Mr. Hayden served as secretary-treasurer until his untimely passing when he was followed by J. D. Fleming, a most able successor, who has continued to spark the program inspired by Mr. Hayden.

The chief way in which the Foundation fosters and supports activities for cotton improvement is through financial aid to existing public agencies who operate in these fields of work. Funds for these purposes are acquired in this manner: The ginner adds an infinitesimal charge of five cents per bale to the grower as the cotton is ginned. (This is returnable to the grower if he objects to the collection.) Then the ginner puts his contribution with that of the grower and transmits to the Foundation. The cottonseed crushers pay on a per mill capacity basis. Outright subscriptions are made by the merchants, market cooperatives and compresses.

In the eight years the Foundation has existed, total direct fund support of some $150,000 has been made available for research, education and promotion. Additional aid has been given by the Foundation to the Oklahoma Experiment Station in buildings and cotton ginning equipment worth $50,000.

A significant and highly beneficial feature of this all-industry support and cooperation is the feeling of satisfaction and enthusiasm it gives the industry for self-help and improvement of its own business and welfare. Highly valuable, also, are the encouragement and inspiration imparted to publicly employed researchers and educators who are thus aided in their work.

• **Effective Democracy** — Back to the national view, the combined and voluntarily coordinated efforts of the many representatives of farmers and industry who effectively secure public fund support for the improvement of all agriculture, including cotton, exemplify representative democracy in a high degree of perfection. Here, also, Rhea Blake and his associates of the National Cotton Council staff truly spark the effort, even carry the ball, to make representatives of the tax paying and voting public aware of the needs and opportunities for improvement in agriculture.

It is the leadership in the Council which draws together in mutual understanding and common objectives the key forces of the national farm and commodity groups. These men, working with both the executive and legislative branches of the government, have secured very substantial added fund support to research and education for agriculture in recent years. Apparently, members of the Congress appreciate the clarification of many of the aspects of agriculture, complicated by interacting factors as it is, and react favorably to the work of these farm and commodity groups for increased fund support.

Finally, any discussion of the multiple cooperating forces that account for the broad-front and phenomenal advancement in cotton production today which failed to note the press, radio and television would thereby omit a most vital member of the team. Modern communication makes this sort of advancement possible, and crowns the efforts of the teamworkers with success. The intelligent dissemination of the fruits of research to the cotton grower, ginner and cottonseed crusher, which is done so effectively by the press and radio, is a mark of outstanding distinction to that profession.

Now, where else but in America could you hope to find—at this time—such a highly perfected and thoroughly successful realization of the complex but voluntarily coordinated and systematic effort toward an undertaking as difficult, involved and far reaching in effects as is modern, improved cotton production? It is a miracle, no less, and no other commodity group has approached the cotton group in such a marvelous achievement!

• Students Seeking Facts on Cotton

COTTON FACTS are wanted by Sidney W. Wilcox, assistant professor of English at Arizona State College, Tempe. His students are preparing a cotton history, and manuscripts sent to them will be returned or may be placed in the school library if the donor desires.

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CALENDAR

Conventions - Meetings - Events

			1	2	3	4
12	13	14	15	16	17	18

• April 9-10—Valley Oilseed Processors' Association annual meeting. Buena Vista Hotel, Biloxi, Miss. C. E. Garner, 1024 Exchange Building, Memphis, secretary.

• April 12-13 — National Cotton Compress and Cotton Warehouse Association annual convention. Galvez Hotel, Galveston, Texas. John H. Todd, 1085 Shrine Building, Memphis, Tenn., executive vice-president.

• April 22-25 — American Oil Chemists' Society spring meeting. Shamrock Hotel, Houston. For information, write Society headquarters, 35 East Wacker Drive, Chicago.

• May 15-16 — Oklahoma Cottonseed Crushers' Association annual meeting. Sequoyah State Park, near Muskogee. J. D. Fleming, 1004 Cravens Building, Oklahoma City, secretary.

• May 21-22—National Cottonseed Products Association convention. Statler Hilton Hotel, Dallas. John F. Moloney, 19 S. Cleveland Street, Memphis 4, secretary-treasurer.

• May 31-June 1-2—Seventeenth annual American Cotton Congress. Lubbock, Texas. Burris C. Jackson, Hillsboro, Statewide Cotton Committee of Texas, general chairman.

• June 3-6 — International Oil Mill Superintendents' Association annual convention. Plaza Hotel, San Antonio, Texas. H. E. Wilson, P. O. Box 1180, Wharton, Texas, secretary-treasurer.

• June 4-5 — North Carolina Cottonseed Crushers' Association and South Carolina Cotton Seed Crushers' Association joint annual convention. Ocean Forest Hotel, Myrtle Beach, S.C. Mrs. M. U. Hogue, 612 Lawyers Building, Raleigh, secretary-treasurer, North Carolina Association; Mrs. Durrett L. Williams, 609 Palmetto Building, Columbia, secretary-treasurer, South Carolina Association.

• June 6-8 — Tristates Oil Mill Superintendents' Association annual convention. Biloxi, Miss. For information, write Roy Castillow, 20 Lenon Drive, Little Rock, Ark., secretary-treasurer.

• June 7-8—New Mexico Cotton Ginners' Association annual convention. Navajo Lodge, Ruidoso. For information, write Winston Lovelace, secretary-treasurer, Pecos Valley Cotton Oil Co., Loving, N.M.

• June 10-12—Texas Cottonseed Crushers' Association annual convention. Statler Hilton Hotel, Dallas. Jack Whetstone, 624 Wilson Building, Dallas, secretary-treasurer.

• June 16-19—Alabama-Florida Cottonseed Products Association and Georgia Cottonseed Crushers' Association joint annual convention. Lookout Mountain Hotel, Lookout Mountain, Tenn. J. E. Moses, 318 Grand Theatre Bldg, Atlanta, secretary of Georgia Association; C. M. Scales, 322 Professional Bldg., Montgomery, Ala., executive secretary, Alabama-Florida Association.

• June 20-22 — Mississippi Cottonseed Crushers' Association annual convention. Buena Vista Hotel, Biloxi, Miss. Gordon W. Marks, P. O. Box 1757, Jackson, Miss., secretary.

• June 25-26-27 — Oil Mill Operators' Short Course. Texas A. & M. College, College Station. Sponsored by College, Texas Cottonseed Crushers' Association and International Oil Mill Superintendents' Association. For information write Dr. J. D. Lindsay, Texas A. & M. College.

• Aug. 13-15—Joint conventions, American Soybean Association and National Soybean Processors' Association, University of Illinois, Urbana, Ill. R. G. Houghtlin, president, National Soybean Processors' Association, 3818 Board of Trade Building, Chicago 4; Geo. M. Strayer, executive vice-president, American Soybean Association, Hudson, Iowa.

• Aug. 22-23-24—Tenth Beltwide Cotton Mechanization Conference. Biltmore Hotel, Atlanta, Ga. For information, write National Cotton Council, P. O. Box 9905, Memphis 12, Tenn.

• Sept. 23-26 — American Oil Chemists' Society fall meeting. Sherman Hotel, Chicago. For information, write Society headquarters, 35 East Wacker Drive, Chicago.

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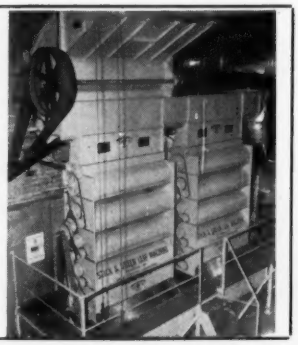
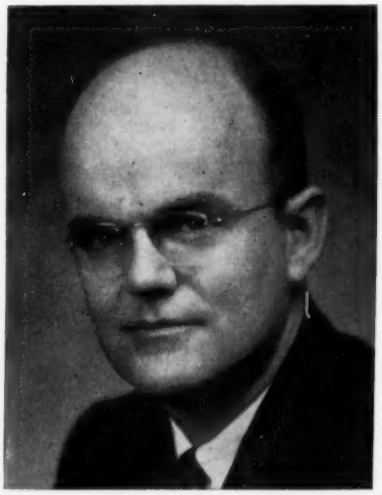


Maid To Represent Lubbock

South Plains Maid of Cotton Revis Jordan will represent Lubbock at the Memphis Cotton Carnival, May 15-19.



To Speak at Cotton Meet

DR. M. K. HORNE, JR., Memphis, chief economist for the National Cotton Council, will be one of the principal speakers at the American Cotton Congress in Lubbock, May 31, June 1-2. Other speakers at the meeting, sponsored by the Statewide Cotton Committee of Texas and other organizations, will include F. Marion Rhodes, USDA, Washington; and Earl Heard, West Point Manufacturing Co., West Point, Ga.

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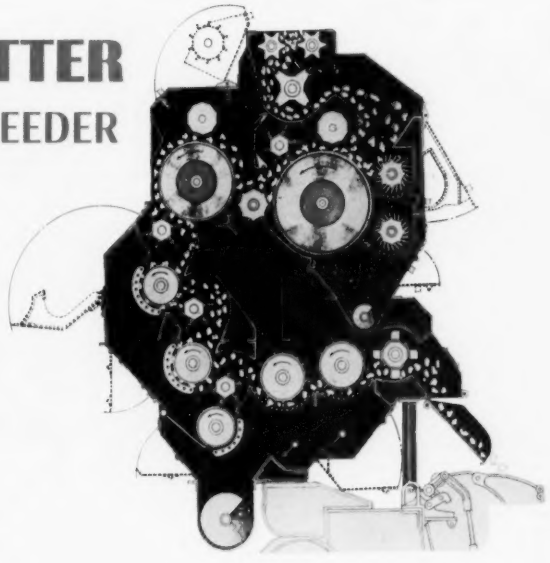

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